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The Role of Small Farmer Cooperatives in the Management of Voluntary Coffee Certifications in Costa Rica

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Abstracts

Abstract

Voluntary certifications offer consumers information on the process in which products are produced. Farmers' organizations play an important role in the management of certifications and in small-farmer access to certified markets. Costa Rican farmers' organizations have a long history of participation in the certified value chain and in fomenting small farmers' access to certified markets. Farmers' organizations also make strategic decisions related to the organization's participation in the certified value chain and how farmers are supported and incentivized to join.

For these reasons Costa Rica provides an interesting milieu to study how farmers' organizations manage certifications. Because of their importance in the certification process in Costa Rica, this research focuses on cooperatives and consortia of cooperatives. Considering the gap in knowledge regarding the role of cooperatives and voluntary coffee certifications, this thesis presents the following questions: What is the role of cooperatives in the management of voluntary coffee certifications?, What are the advantages and disadvantages of participation in voluntary certifications for cooperatives?, What changes do certifications induce at the cooperative and farm levels?, What social aspects in Costa Rica influence the management and effectiveness of certifications? Administrators from twenty of the twenty-two coffee cooperatives in Costa Rica were interviewed to obtain basic data on harvest size, membership and management and participation in certifications. Four cooperatives were selected for in-depth case studies.

Certifications are often criticized for not eliciting widespread change at the farm level due to the selection of compliant farms, but it is the structure of the certifications, including low demand, weak and variable price incentives, high costs of auditing and high requirements for management and training, which incentivize cooperatives to choose individual certifications.

In Costa Rica, voluntary coffee certifications promote small but real benefits to cooperatives and their members. Cooperatives make decisions about the management of certifications based on their business strategies, the type of coffee they produce and the social capital inherent in the cooperative, which is manifested as a group solidarity approach or a commercial approach.

Certifications incite a more holistic approach to coffee production by requiring training and services related to sustainable production. Certifications encourage cooperatives to collaborate with other stakeholders, increasing their connectedness and organizational social capital. This gives members access to new knowledge and services and has the potential to create a virtuous cycle of the production of social capital.

Certifications, however, may induce cooperatives to offer additional services or financial incentives to some members and not to others. A high level of social capital is needed at the administrative level to ensure an equitable distribution of the benefits of certifications while still offering members incentives to pursue certifications.

Résumé

La certification volontaire offre aux consommateurs des informations détaillées sur le processus de production des produits. Les organisations paysannes jouent un rôle important dans la gestion de la certification et dans l'accès des petits agriculteurs aux marchés certifiés. Les organisations de producteurs du Costa Rica ont historiquement joué un rôle important dans la participation des petits producteurs aux filières certifiées et leur motivation à accéder aux marchés certifiés. Les organisations paysannes prennent également des décisions stratégiques quant à la participation de l'organisation dans la chaîne de valeur certifiée et comment les agriculteurs sont soutenus et incités à participer.

Pour ces raisons, le Costa Rica offre un environnement intéressant pour étudier la façon dont les organisations de producteurs de café gèrent les certifications volontaires.

En raison de leur importance dans le processus de certification au Costa Rica, cette recherche se concentre sur les coopératives et les consortiums de coopératives. Considérant le manque de connaissances sur le rôle des coopératives et de la certification volontaire du café, cette thèse traite les questions suivantes: Quel est le rôle des coopératives dans la gestion des certifications volontaires?, Quels sont les avantages et désavantages de la participation dans la certification volontaire par les coopératives ?, Quels sont les changements induits par la certification, au niveau des coopératives et des exploitations ?, Quels aspects sociaux propres au Costa Rica influencent la gestion et l'efficacité de la certification ? Les administrateurs de vingt des vingt-deux coopératives de café au Costa Rica ont été enquêtés pour obtenir des données sur la quantité récoltée, la gestion et la participation dans la certification. Quatre coopératives ont ensuite été sélectionnées pour les études de cas approfondies.

Les certifications sont souvent critiqués pour de ne pas provoquer d'amélioration au niveau de l'exploitation en raison de la sélection d'exploitations conformées, c'est mais la structure des certifications, y compris la faible demande, les incitations faible et variables des prix, les coûts élevés de l'audit et des exigences élevées en gestion et en formation qui encourage les coopératives à choisir la certification individuelle.

Au Costa Rica, les certifications de café volontaire fournissent des avantages réels, bien que minimes, aux coopératives ainsi qu'à leurs membres. Les coopératives prennent des décisions sur la gestion des certifications basées sur leurs stratégies commerciales, du type de café qu'elles produisent et le capital social inhérent à la coopérative qui se manifeste par une approche par la solidarité de groupe ou une approche commerciale.

Les certifications incitent à une approche plus holistique de la production de café en nécessitant plus de formations et de services liés à la production durable. Les certifications encouragent les coopératives à collaborer avec d'autres parties prenantes, en augmentant leur connectivité et leur capital social. Cela donne aux membres un accès à de nouvelles connaissances et services, et a le potentiel de créer un cercle vertueux de production de capital social.

La certification, cependant, peut encourager les coopératives à offrir des services supplémentaires ou des incitations financières à certain membres et pas à des autres. Un niveau élevé de capital social est nécessaire au niveau administratif pour assurer une répartition équitable des bénéfices de la certification tout en offrant aux membres des incitations à poursuivre la certification.

Resumen

Las certificaciones voluntarias ofrecen a los consumidores información sobre el proceso de producción de distintos productos. Las organizaciones de productores juegan un papel importante en la gestión de las certificaciones y en el acceso de los pequeños agricultores a los mercados certificados. Las organizaciones de productores costarricenses tienen una larga historia de participación en la cadena de valor certificada y en el fomento del acceso de los pequeños productores a los mercados certificados. Las organizaciones de productores también toman decisiones estratégicas relacionadas con la participación de la organización en la cadena de valor certificada y en cómo se apoyan e incentivan a los asociados.

Por estas razones Costa Rica ofrece un medio interesante para estudiar cómo las organizaciones de productores gestionan las certificaciones. Teniendo en cuenta la brecha en el conocimiento sobre el papel que desempeñan las cooperativas y las certificaciones voluntarias de café, esta tesis presenta las siguientes preguntas: ¿Cuál es el papel de las cooperativas en la gestión de las certificaciones voluntarias?, ¿Qué cambios inducen las certificaciones a niveles de terreno (cafetal) y de cooperativa?, ¿Qué aspectos sociales y singulares de Costa Rica influyen en la gestión y la eficacia de estas certificaciones?

La investigación consistió en once meses de trabajo de campo en Costa Rica. Se entrevistó a los administradores de veinte de las veintidós cooperativas de café en Costa Rica para obtener datos básicos sobre el tamaño de la cosecha, la pertenencia y la gestión y la participación en las certificaciones. Cuatro cooperativas fueron seleccionadas para los estudios de caso en profundidad.

Aunque las certificaciones son a menudo criticadas por no provocar un cambio generalizado en las explotaciones debido a la selección única de las que cumplen con las reglas, es la estructura de las certificaciones, incluyendo la baja demanda, los incentivos de precios débiles y variables, los altos costos de la auditoría y los altos requisitos para gestión y formación, la que conduce a las cooperativas a elegir certificaciones individuales.

En Costa Rica, las certificaciones de café voluntarias promueven beneficios pequeños pero reales para las cooperativas y sus asociados. Las Cooperativas toman decisiones sobre la gestión de las certificaciones en función de sus estrategias de negocio, el tipo de café que producen y la capital social inherente a la cooperativa, que se manifiesta como un enfoque de solidaridad de grupo o de un enfoque comercial.

Las certificaciones incitan a un enfoque más holístico de la producción de café, al exigir la formación y los servicios relacionados con la producción sostenible. Las certificaciones impulsan a las cooperativas a colaborar con otras partes interesadas, aumentando su conectividad y el capital social de la organización. Esto da a los miembros acceso a nuevos conocimientos y servicios, y tiene el potencial de crear un círculo virtuoso de la producción de capital social.

Executive Summary

Voluntary certifications offer consumers information on the process in which products are produced. They can use this information to make more informed purchasing decisions and to espouse the issues of sustainability they deem important. Voluntary coffee certifications were some of the first certifications available to consumers. These certifications are purported to promote environmental, social and financial sustainability in the countries of coffee production, but empirical evidence shows mixed results.

Farmers' organizations play an important role in the management of certifications and in small-farmer access to certified markets. Farmers' organizations offer advisory and other support services to their members to help them access certifications and commercialize certified coffee. Farmers' organizations also make strategic decisions related to the organization's participation in the certified value chain and how farmers are supported and incentivized to join.

Costa Rican farmers' organizations have a long history of participation in the certified value chain and in fomenting small famers' access to certified markets. Cooperatives (which in Costa Rica have a distinct legal status from other types of farmers' organizations, such as alliances) and consortia, or second-level cooperatives, are the most important means for small farmers in Costa Rica to access certifications.

For these reasons Costa Rica provides an interesting milieu to study how farmers' organizations manage certifications. Because of their importance in the certification process in Costa Rica, this research focuses on cooperatives and consortia of cooperatives. Considering the gap in knowledge regarding the role of cooperatives and voluntary coffee certifications, this thesis presents the following questions:

- What is the role of cooperatives in the management of voluntary coffee certifications?

- What are the advantages and disadvantages of participation in voluntary certifications for cooperatives?
- What changes do certifications induce at the cooperative and farm levels?
- What social aspects in Costa Rica influence the management and effectiveness of certifications?

Methods

Research consisted of eleven months of field work in Costa Rica. Administrators from twenty of the twenty-two coffee cooperatives in Costa Rica were interviewed to obtain basic data on harvest size, membership and management and participation in certifications. This data was used to create a typology of Costa Rican coffee cooperatives. Four cooperatives were selected for in-depth case studies based on the typology. Case studies included in-depth interviews with cooperative managers and agronomists and a review of internal documents such as training records and assembly minutes when available. Case studies also included social capital surveys of members and semi-structured interviews regarding the evolution of farming practices.

Major Results

Chapter 4 presents new information regarding price incentives paid to cooperatives and cooperative members to encourage participation in voluntary certifications. These incentives are weak and in some cases vary with the world price of coffee. Some types of certifications, such as Fair Trade and organic certification, reduce the fluctuation in prices paid to cooperatives and to farmers. When the world price of coffee is high, there may be no economic incentives to pursue these certifications. On the other hand, corporate certifications such as Starbuck's CAFE Practices may augment the fluctuation of prices paid to cooperatives or to farmers. Incentives to pursue corporate certifications may be absent when the world price of coffee is low.

With the exception of Fair Trade certification which requires that all members of the cooperative be certified, cooperatives can choose to certify all or only a portion of their members. Cooperatives can often fill buyer demand for certified coffee by certifying fewer than 5% of their members. Cooperatives may choose different strategies for different certifications. The majority of the cooperatives choose individual certifications to minimize auditing costs and the pressure that certifications put on the human resources of the cooperative for training and management. Individual certifications also lower the barriers to certification, as the cooperative can select the members which comply with the majority of the certification standards for the individual certifications. Cooperative may also give priority to large farms in order to reduce management costs or they may give priority to members who have been loyal to the cooperative in the past as a reward for that loyalty.

Therefore, although certifications are often criticized for not eliciting widespread change at the farm level due to the selection of compliant farms, it is the structure of the certifications, including low demand, weak and variable price incentives, high costs of auditing and high requirements for management and training, which incentivize cooperatives to choose individual certifications.

Chapter 5 investigates changes at the cooperative and at the farm level. Certification-related changes begin at the cooperative level. Cooperatives may need to join a consortium to access services such as capacity building among cooperative staff, the collective use of equipment or financial support. In the first phase of implementation cooperative staff are trained, internal control systems are implemented and upgrades may be made to the mill. These changes correspond with certification requirements.

The second phase of the implementation of certifications includes changes to the advisory services offered to the members. The largest change is in the subjects of the group training. Before certification, training focused on productivity and the management of pests and disease. Certifications oblige the cooperatives to add new themes to their training, such as soil and water

management, the reduction of agrochemicals, pesticide safety and handling and climate change. In the beginning, these subjects may be out of the scope of experience of the cooperatives' agronomists and technicians. Cooperatives form new relationships with outside organizations and other stakeholders to offer trainings and support members. Outside stakeholders may also offer services such as recycling pesticide containers, providing shade tree seedlings or analyzing soils.

These new topics addressed by advisory services, along with other influences such as laws and outside initiatives, change farmers' perceptions about sustainable farming practices. Frequent attendance in group training is correlated with changes in certain farming practices such as the use a farm record book, use of a mask when applying pesticides, and use of a soil analysis to determine the amount of fertilizer they should apply. Conversely, the use of shade trees is not related to an individual's attendance of cooperative trainings, rather it is related to other services that the cooperative provides. Members are more likely to have increased the number of shade trees on their farm in the last twenty years if their cooperative provided members with shade trees free of charge.

Although quantifiable farm-level changes are ultimately small, certifications offer a more holistic approach to coffee production. They contribute to changing perceptions among farmers about sustainable farming practices. Change may be slow as farmers 'unlearn' old paradigms and create new ones.

Chapter 6 explores the national context of Costa Rica, including the social capital in the cooperatives, and analyzes how this context effects how certifications are managed.

High levels of social capital were found in cooperatives which participate in certifications. The one cooperative studied with low social capital does not have any certifications. The balance between bridging, or out-group social capital, and bonding, or in-group social capital, determines the willingness of cooperatives to provide equal access to certifications among the members and how cooperatives provide financial and in-kind incentives.

Social capital, as measured by generalized trust in others, also influences individual participation in voluntary certifications. Members who believe that, in general, one can trust others are more likely to pursue Rainforest Alliance certification with no financial incentives. Conversely, no relationship was found between generalized trust and participation in Utz certification when a financial incentive is provided.

Conclusions

In Costa Rica, voluntary coffee certifications promote small but real benefits to cooperatives and their members. Cooperatives make decisions about the management of certifications based on their business strategies, the type of coffee they produce and the social capital inherent in the cooperative, which is manifested as a group solidarity approach or a commercial approach.

Certifications incite a more holistic approach to coffee production by requiring training and services related to sustainable production. Certifications encourage cooperatives to collaborate with other stakeholders, increasing their connectedness and organizational social capital. This gives members access to new knowledge and services and has the potential to create a virtuous cycle of the production of social capital.

Certifications, however, may induce cooperatives to offer additional services or financial incentives to some members and not to others. A high level of social capital is needed at the administrative level to ensure an equitable distribution of the benefits of certifications while still offering members incentives to pursue certifications.

Keywords: Farmers' organizations, voluntary certifications, advisory services, smallholder farmers, social capital

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Chapter 1: Introduction

Abstract

This chapter outlines the relevant literature on voluntary coffee certifications. Certifications have emerged to improve the position of small holder farmers in the value chain while at the same time promoting sustainable production. Their effectiveness in reaching these goals is variable. It has been suggested that efficacy depends on the type of certification, incentives offered at the farm level to pursue certifications and the national context into which they are adopted. Nevertheless there is little research on the differences in incentives for different certifications and on which aspects of national context affect certification efficacy.

Each certification scheme focuses on different aspects of sustainability, including environmental and social aspects.

This chapter highlights the lack of literature on certifications other than Fair Trade and organic, the lack of information on non-financial benefits of certification, and questions of which social aspects of national context affect the efficacy of certifications. This chapter includes a table comparing the standards which are discussed in this manuscript and also presents the research questions which will be answered in this thesis.

Résumé

Ce chapitre présente la littérature pertinente sur la certification volontaire du café. La certification a émergé pour d'améliorer la situation des petits producteurs dans la chaîne de valeur et promouvoir une production durable. Leur efficacité dans l'atteinte de ces objectifs est variable. Il a été suggéré que l'efficacité dépend du type de certification, des incitations offertes au niveau de la ferme à poursuivre la certification et du contexte national dans lequel elles sont adoptées. Néanmoins, il y a peu de travaux sur les différences entre les incitations des différentes certifications, ainsi que sur les aspects du contexte national qui affectent l'efficacité de la certification.

Chaque système de certification met l'accent sur différents aspects de la durabilité, y compris ceux environnementaux et sociaux.

Ce chapitre révèle le manque de documentation à propos des types de certifications différentes du commerce équitable et de l'agriculture biologique. Il met aussi en évidence le manque d'information sur les avantages non financiers de la certification, et pose la question des aspects sociaux du contexte national qui affectent l'efficacité de la certification. Il contient un tableau comparant les certifications abordées dans ce document, et présente les questions de recherche qui sont traitées.

Resumen

En este capítulo se describe la literatura relevante acerca de las certificaciones voluntarias de café. Las certificaciones han surgido para mejorar la situación de los pequeños agricultores en la cadena de valor, y al mismo tiempo la promoción de la producción sostenible. Su eficacia en la obtención de estos objetivos es variable. Se ha sugerido que la eficacia depende del tipo de certificación, los incentivos ofrecidos al nivel de finca para obtener las certificaciones y el contexto nacional en el que se adoptan. Sin embargo, existe poca investigación sobre las diferencias en los incentivos para diferentes certificaciones y sobre qué aspectos del contexto nacional afectan a la eficacia de certificación.

Cada esquema de certificación se centra en diferentes aspectos de sostenibilidad, incluidos los aspectos ambientales y sociales.

Este capítulo destaca la falta de literatura sobre las certificaciones que no sean de comercio justo y agricultura orgánica, la falta de información sobre los beneficios no financieros de la certificación, y las preguntas relacionados a aspectos sociales del contexto nacional que afectan a la eficacia de las certificaciones. En este capítulo se incluye un cuadro comparativo de las normas que se discuten en este manuscrito y también presenta las preguntas de investigación que serán respondidas en esta tesis.

Voluntary Coffee Certifications and the Global Coffee Market

Coffee is, by nature, a volatile market and small-scale farmers face difficulties dealing with these variations (Bacon, 2008). The market for coffee is plagued by times of high prices when farmers may invest considerable resources into expanding their coffee production and subsequent low prices when the price received by the farmer may not cover the costs of production (Nevins, 2007). The most recent prolonged coffee crisis was in 1999-2004 when farmers experienced some of the lowest coffee prices in over a century (Bacon, 2008). Coffee prices dropped below the costs of production and in 2001 Central American farmers experienced losses per quintal[1] ranging from $29/quintal in Costa Rica and $12/quintal in El Salvador (Flores, 2002). In the past the International Coffee Agreement (ICA), which was in effect from 1962-1989, regulated the price of coffee on the world market (Talbot, 2002). The ICA was generally considered successful in increasing the proportion of the final price that was paid to producers and in reducing the lows of the market (Daviron & Ponte, 2005; Talbot, 2002), although it may have been less successful in reducing market spikes (Mehta & Chavas, 2008). The collapse of the ICA has tipped the balance of power within the coffee chain to the side of the actors in consuming countries (Johannessen & Wilhite, 2010).

Certifications such as Fair Trade[2] and certified organic have emerged as a market-driven innovation to de-commoditize coffee and to offer farmers more resilience against price fluctuations while at the same time encouraging more sustainable farming practices (Bacon, 2005).

Several studies have found that Fair Trade offers modest financial benefits to producers and their organizations (Lyon, 2007; L. T. Raynolds, Murray, & Taylor, 2005) and increases small farmer resiliency (Bacon, 2005). However the effect on the wages of farm laborers is variable (Cramer, Johnston, Oya, & Sender, 2014; Luetchford, 2008). On the other hand, other studies have found that Fair Trade and organic certified farmers have lower incomes than conventional farmers (Beuchelt & Zeller, 2011).

Perhaps more important than the financial benefits of Fair Trade are the social benefits, such as support for community development, empowerment and capacity building (Bacon, 2010; L. T. Raynolds et al., 2005). However, if poorly managed, certifications may augment inequality among the members in a cooperative (Fraser, Fisher, & Arce, 2013; Getz, 2008; González & Nigh, 2005) and destroy trust (Elder, Zerriffi, & Le Billon, 2012). There is also concern that certification standards may create a barrier for developing countries to participate in these global value chains because of the difficulties associated with complying with certification regulations (Lazaro, Makindara, & Kilima, 2008).

This discrepancy in the effectiveness of voluntary certifications has been attributed to national regulatory context (Elder, Zerriffi, & Le Billon, 2013), yet other important dimensions of national context which determine certifications' efficacy have not yet been explored. These dimensions include levels of social capital and organization of the cooperative sector. This thesis attempts to contribute to the identification of these dimensions.

Certification Standards

The certification standards currently on the market have a variety of social and environmental standards. Each certification scheme focuses on different aspects of sustainable production (Raynolds, Murray, & Heller, 2007). This thesis focuses on coffee certifications found in Costa Rica. See Table 1.

Fair Trade focuses on providing economic incentives to producers to implement socially and environmentally sustainable practices. Certification is only available to small and medium-holder farmers who are organized in democratic producers' associations. Fair Trade specifies a minimum price that producers must be paid for their product ($1.40/pound since April, 2011 and for the duration of this study) and includes a $0.20/pound social premium. Members vote on how the social premium will be used during annual assemblies (Fairtrade International, 2014). Certification

standards focus on social justice, reducing chemical inputs, employment relationships and sustainability management (Raynolds et al., 2007).

Rainforest Alliance is a member of the Sustainable Agriculture Network and its certification has the most developed standards protecting social welfare and the environment. Certification requirements focus on biodiversity, human rights and employment relationships (Rainforest Alliance & SalvaNatura, 2010). Because of its strategic goal of large-scale change across the coffee sector, Rainforest Alliance began by certifying mainly large plantations. However, Rainforest Alliance is increasingly certifying small-scale farmers and many small farmer cooperatives currently have certified farms (Raynolds et al., 2007). Auditing services for Rainforest Alliance certification are managed by its RA-Cert division (Rainforest Alliance, 2014).

CAFE (Coffee and Farmer Equity) Practices is the responsible-sourcing program for Starbucks Coffee Company. Standards, or guidelines as Starbucks prefers to call them, consist of a scorecard with 74 items. Criteria on the scorecard are categorized as regular standards, 'zero tolerance' or 'extra point' (Ruben & Zuñiga, 2011). Standards focus on traceability and origin, issues at the heart of the company's mission to provide 'the finest coffee' (Raynolds, 2009) but also include requirements in social responsibility and environmental leadership (Starbucks Coffee Company, 2012). There is no guaranteed premium for certified coffee, but economic transparency within the supply chain is required (Starbucks Coffee Company, 2016).

Utz certification is based on GlobalGAP traceability requirements and extensive recordkeeping. It is considered a mainstream coffee certification which seeks to 'hold the bar,' rather than 'raise the bar' on issues of producer livelihoods and environmental protection (Raynolds et al., 2007). Certification criteria focus on supply chain management and good agricultural practices (Utz Certified, 2015). When the certification was first initiated it included mandatory premium, but this premium is no longer specified in the certification guidelines (Daviron & Ponte, 2005). Rather, the certification seeks to increase income by improving yields and quality (Ruben & Zuñiga, 2011).

Organic coffee certification has strict environmental standards, in particular prohibited chemicals, however, it is lacking in other aspects of sustainability. There are no social criteria that producers must meet for EU organic certification (IFOAM, 2014) and the premium which was once a significant incentive for farmers now often does not cover the costs of production (Beuchelt & Zeller, 2011).

Harvested by Women is a certification scheme of the International Women's Coffee Alliance. The certification was created in 2012 and is still in the development stage. Certification standards focus on gender issues, employment relations, and soil and waste management (International Trade Centre, 2012).

Standard-Compliant Production

In 2012, 40% of the world's coffee production was compliant with the standards of at least one certification. However, only 12% of the global supply was sold with certification, indicating an oversupply of certified coffee (Potts et al., 2014). The top five producers of standard-compliant coffee are Brazil (40%), Colombia (17%), Vietnam (15%), Peru (6%) and Honduras (3%). Costa Rica produces 1% of the world's standard-compliant coffee (Potts et al., 2014). Sales of nearly all standard-compliant coffee have experienced double-digit growth rates between 2008 and 2012. The rate of growth in 4C (Common Code for the Coffee Community)[3] was 90% between 2008 and 2012 for a total in 2012 of 152,708 metric tons. This was followed by Rainforest Alliance with a growth rate of 28% between 2008 and 2011 and 2011 total sales of 129, 846 metric tons. Utz experienced a 25% increase in global sales between 2008 and 2012 with a 2012 total of 188,096 metric tons. CAFE Practices grew by 14% in the same time period with 223,230 metric tons of sales in 2012. Fair Trade's 2008-2012 growth rate was 13% with a 2012 total of 128,000 metric tons. Sales of organic certified coffee grew by only 4% between 2008 and 2011 with a 2011 total of 133,163 metric tons (Potts et al., 2014). Despite the growing importance of other certifications, current research focuses mainly on Fair Trade and organic certification.

Table 1 : A comparison of popular certification standards. Elaborated from multiple sources (4C Association, 2012; Fairtrade International, 2014; IFOAM, 2014; International Trade Centre, 2012; Rainforest Alliance & SalvaNatura, 2010; Starbucks Coffee Company, 2012; Utz Certified, 2015).

Standard	Environment	Social	Farm Management	Coffee Quality	Ethics	Premium
Fair Trade International	Focus on medium-term improvement of soil and forests. Prohibited chemicals- 'Red List'. Focus on chemical storage and training. Long-term goals on carbon sequestration.	Focus on worker protection, workplace safety and employment relations.	Focus on supply chain responsibility.	Non-explicit quality standards.	Focus on compliance to legislation.	Guaranteed minimum price of $1.40/pound for Arabica plus a $0.20/pound social premium.
Rainforest Alliance	Focus on soil, biodiversity, water and forest protection. Prohibited chemicals and continuous reduction of agrochemicals.	Focus on worker protection, employment relations and gender equality.	Focus on sustainability management.	Focus on traceability.	Focus on compliance to legislation.	None guaranteed.
CAFE Practices	Focus on soil and water protection. WHO prohibited pesticides, Type 1A and 1B.	Focus on compliance with local labor laws and safe handling of pesticides.	Recommended management plan, financial transparency.	Non-explicit quality standards.	Focus on compliance to legislation.	None guaranteed.
Utz	Focus on medium-term water and energy management. Prohibited chemicals- WHO Type 1A and 1B, Stockholm Convention on Persistent Organic Pollutants, PAN's Dirty Dozen. Recommendations on soil, forest, waste management and biodiversity protection.	Non-discrimination, worker rights and employment relations.	Focus on sustainability management and system of internal control.	Recommendation to meet industry standards.	Compliance with International Labor Organization Conventions.	None guaranteed.
Organic (IFOAM)	Focus on soil, water and biodiversity protection and nutrient recycling. Strict chemical restrictions but vary by specific certification.	Worker protection standards, but weak in overall social protection and gender equality.	Few management standards.	Non-explicit quality standards.	No ethics standards.	Fair Trade + Organic double certifications guarantees + $0.20/pound over Fair Trade minimum price.
Harvested by Women	Prohibited pesticides- 'Red Label' of WHO Type 1A or 1B. Waste management policies.	Focus on women's rights	Traceability of price premium, if there is one.	None	None	None guaranteed.

Farmers' Organizations

Farmers' organization refers to any organized group of agricultural producers. This includes different types, such as cooperatives, collectives, or associations (Penrose-Buckley, 2007; Young, Sherman, & Rose, 1981). Farmers' organizations are producer owned and controlled business which are engaged in collective marketing activities (Penrose-Buckley, 2007). Because farmers' organizations are member-owned, they must provide benefits to their members while maintaining themselves as a profitable business. Farmers' organizations provide important services to their members such as advisory services, group purchase of inputs, the mobilization of resources for local development, and a forum in which farmers and governments interact (Wennink, Nederlof, & Heemskerk, 2008; Young et al., 1981).

Participation in farmers' organizations is vital for small-holder access to certifications (Muradian & Pelupessy, 2005) and an important strategy in improving the empowerment, a livelihoods, and access to services of small-scale farmers (Bacon, 2008; Ton, Bijman, & Oorthuizen, 2007; Wennink & Heemskerk, 2006). In Costa Rica farmers' organizations are classified as associations (Gobierno de Costa Rica, 1970), cooperatives (Gobierno de Costa Rica, 1968) and consortia (Gobierno de Costa Rica, 1999). Each type of organization has its own distinct legal status. Consortia are second-level cooperatives whose members are cooperatives, not individuals.

A cooperative is one type of farmers' organization. There is no universally-accepted definition of cooperative and the structure and organizational models can vary (Chaddad & Cook, 2004). The International Co-operative Alliance defines a cooperative as '*an autonomous association of persons united voluntarily to meet their common economic, social and cultural needs and aspirations through a jointly owned and democratically-controlled enterprise*' (International Co-operative Alliance, 2015).

Costa Rican cooperatives and consortia provide important services to members to facilitate access to certifications (Faure, Le Coq, et al., 2012). Fair Trade in particular has been found to strengthen

producers' organizations (Luetchford, 2008; Ronchi, 2002; Ruben & Zuñiga, 2011), although some studies show inconclusive results (Elder et al., 2012).

There is little data neither on the role of producers' organizations in the management of other certifications nor on the effect of these certifications on the organizations. One study from Mexico found that CAFE Practices certification threatened the existence of a producer cooperative and failed to build human capital in staff and members (Renard, 2010). Mutersbaugh (2002) cites a case, also in Mexico, of organic certification weakening a peasant organization's ability to advocate for its members.

Problem Statement

There is abundant literature on voluntary coffee certifications. However this literature focuses on Fair Trade and organic certifications and virtually overlooks other certifications, such as CAFE Practices, Rainforest Alliance and Utz. Research regarding the financial impact of certifications is contradictory, with some studies finding a positive effect on producer income and other studies finding little to no effect. Social impacts are also variable, with some studies suggesting that certifications build social capital within certified farmers' organizations and others finding that certifications have destroyed social capital. Little attention is paid to non-financial benefits of certifications for cooperatives and farmers.

This thesis explores the role of farmers' organizations in the management of voluntary coffee certifications and the effect on these certifications on small farmers and their organizations. It focuses on the social dynamics between farmers and their cooperatives.

Chapter 2 presents the methods used to collect and analyze data. Chapter 3 provides background information on the area of study: Costa Rica's coffee cooperative sector. Chapters 4, 5 and 6 are based on articles submitted for publication. As these three chapters draw on data collected from the same periods of field work and each chapter can stand alone, there is some repetition in the methods of the three chapters.

Introduction

Chapter 4 of this thesis addresses the following questions in response to the lack of academic literature regarding the role of farmers' organizations in the management of voluntary coffee certifications and the discrepancies in the literature about financial incentives for certified coffee:

- What is the role of cooperatives in the management of voluntary coffee certifications *including Fair Trade, CAFE Practices, Rainforest Alliance, organic and Utz?*
- *What factors influence the decisions that cooperatives make regarding the management of certifications?*
- *What financial and non-financial incentives are offered to cooperatives and their members to encourage participation in voluntary certifications?*

To further address the question of non-financial benefits of certifications, Chapter 5 looks at how advisory services change with certification and how that affects the larger discourse surrounding the sustainability of farming practices. The following research questions are targeted:

- *How do a cooperative's advisory services change with certification?*
- *How do outside stakeholders involved in certifications influence cooperative services?*
- *What are the changes at the cooperative and farm level with the implementation of certifications?*

Chapter 6 considers the social context of Costa Rican coffee cooperatives to better understand the effect of national context on certifications' efficacy in inducing changes in the environmental, financial and social sustainability of cooperatives. It addresses the following research questions:

- *How does the social capital of the members and the organization affect the management of voluntary certifications?*
- *What is the potential for certifications to build social capital in cooperatives?*

The results of the three empirical chapters are synthesized in Chapter 7, allowing for a deeper discussion of the issues and their policy and theoretical implications.

Chapter 8 concludes the thesis with a summary of the implications of this work on management of certifications. The results will be useful to improve the efficacy of certifications in increasing the environmental, social and financial sustainability of the livelihoods of small farmer and farmers' organizations in all parts of the world.

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[1]One quintal equals 100 pounds or 60 kg.

[2] Fair Trade can be seen listed variously as Fairtrade (to denote Fairtrade International), Fair Trade USA (to denote the American Fair Trade Certification) and fair trade to denote the concept of fair commerce, but not the certification. This manuscript uses 'Fair Trade' to denote both Fairtrade International and Fair Trade USA, though the majority of Fair Trade certification in Costa Rica is through Fairtrade International.

[3]4C certification, while popular on a global scale, is not popular among Costa Rican cooperatives and is not dealt with in this manuscript.

Chapter 2: Methods

Abstract

This research consists of a mixed methods approach to data collection. Case studies were conducted in four representative cooperatives. Data collection consisted of quantitative surveys of members to assess levels of social capital; semi-structured interviews with members regarding farming methods; qualitative interviews with cooperative administrators; focus group discussions with members; and a review of internal documents.

Results were analyzed by a cross-case thematic analysis of the four case studies. A timeline analysis was also undertaken to determine the evolution of cooperative services, changes in farming practices and the factors which influence these changes.

Résumé

Ce travail mobilise une méthode mixte de collecte de données. Des études de cas ont été menées sur quatre coopératives représentatives. Le collecte de données a consisté en des enquêtes quantitatives auprès des membres, réalisés dans le but d'évaluer les niveaux de capital social ; des entretiens semi-structurés avec des membres, à propos des pratiques agricoles ; des entretiens qualitatifs avec les administrateurs des coopératives ; des discussions de groupes avec les membres et ; l'examen de documents internes.

Les résultats ont été obtenus par une analyse thématique croisée des quatre études de cas. Une analyse chronologique a également été réalisée pour déterminer l'évolution des services fournis par les coopératives, les changements dans les pratiques agricoles et les facteurs qui influencent ces changements.

Resumen

Esta investigación consiste en un método mixto para la recolección de datos. Se llevaron a cabo estudios de caso en cuatro cooperativas representativas. La recolección de datos consistió en encuestas cuantitativas de los miembros para evaluar los niveles de capital social; entrevistas semi-estructuradas a los miembros con respecto a los métodos de cultivo; entrevistas cualitativas con los

administradores de la cooperativas; grupos de discusión con los asociados; y una revisión de los documentos internos.

Los resultados fueron analizados empleando un análisis temático cruzado de casos de los cuatro estudios de caso. También se realizó un análisis de línea de tiempo para determinar la evolución de los servicios cooperativos, los cambios en las prácticas agrícolas y los factores que influyen en estos cambios.

Study Design

This thesis relies on a mixed-methods approach to data collection to answer the research questions outlined in the previous chapter. It uses a combination of quantitative surveys and qualitative case studies, interviews and focus group discussions. It also includes a review of the internal documents of case study cooperatives, including training records, newsletters and the minutes from annual assemblies.

Research Phases

The first phase of research included a literature review, background reading and auditing classes related to the research. The literature review included current research on voluntary certifications, social capital, collective action, agricultural cooperatives and advisory services. Background reading included text and grey literature regarding the coffee industry in Costa Rica, economics, sociology and case study research. Classes were audited in organizational analysis, qualitative survey methods and socio-economics.

Phase two was conducted in Costa Rica in March through August 2013. Twenty of the twenty-two coffee cooperatives were visited to collect basic information on the size of the cooperative (See Table 2), the quality of coffee produced and certification management (type of certification, area and number of members certified, premiums paid to farmers, auditing costs etc). This data was collected in the form of a semi-structured interview (N. Sibelet, M. Mutel, P. Arragon, & M. Luye, 2013), using the interview script as a guide, but pursuing further information when applicable. The interview guide can be found in Appendix 2. In all cooperatives the person most involved in certifications was interviewed. In most cases this was the general manager of the cooperative, but in some cases the manager indicated a sales manager or agronomist who worked more closely with certifications. Additional interviews and email communications were conducted with other stakeholders, including managers at certification bodies such as Rainforest Alliance, the Women's Coffee Alliance, Starbuck's Farmer Support Center; consortia of cooperatives such as Consortium of Coffee Cooperatives of

Guanacaste and Montes de Oro (Coocafe), Sustainable Coffee Initiative (Suscof), CafeCoop; governmental organizations such as National Coffee Institute (Icafe), Ministry of Agriculture and Livestock (MAG), and various corporate buyers of certified coffee.

In Phase 3, interview data were processed and interpreted according the thematic analysis method described in Sibelet, M. Mutel, P. Arragon, and M. Luye (2013). A list of relevant analyzing dimensions was made based on the interview questions (number of members, volume and quality of harvest, number and type of certifications, individual or collective management of certifications, motivations to pursue certifications etc.). 'Number of certifications' and 'type of certifications' were determined to be the most important variables to use in order to study and predict the extent to which cooperatives will participate in certifications. Cooperatives were organized by these variables and patterns emerged regarding the secondary variables of number of members, quality of harvest, motivations to pursue certifications, etc. A typology of Costa Rican coffee cooperatives was created, as detailed in Chapter 4. From this typology, four cooperatives were chosen for further study. Cooperatives were chosen for a diversity of Type (as defined in the typology), geographical location and certification type (Fair Trade, CAFE Practices, Rainforest Alliance etc.).

In Phase 4, conducted in April through September 2014, case studies were conducted in the four selected cooperatives. The case study method was chosen for its usefulness in answering 'how' questions (Yin, 2009). The case study method was deemed particularly useful in answering the research questions: *How do a cooperative's advisory services change with certification? How do outside stakeholders influence the way cooperatives provide services? How does the social capital of the members and the organization affect the management of voluntary certifications?*

Approximately one month was spent in each case study cooperative, living in a village within the jurisdiction of each cooperative or in the home of a cooperative member. During this time I conducted interviews with the administrators of the cooperatives regarding the evolution of farming practices; advisory services such as group training, site visits and field days; collaborations with other

stakeholders; and their perceptions about certifications. I also conducted social capital surveys (See Appendix 1) and interviews about farming practices (use of herbicides, soil analysis, shade trees etc., See Table 2). I reviewed internal documents as available (ex., training records and minutes from general assemblies) and attended cooperative events when possible (group training, farm visits and general assemblies). A Masters student from the University of Copenhagen, Eva Kraus, conducted in-depth interviews about farming practices with coffee producers in CoopeLlanoBonito and CoopeTarrazu. The data collected was used in her thesis (Kraus, 2015) and also appears in Chapter 5.

A fifth cooperative was identified as an interesting case from the point of view of social capital. A mini-case study consisting of interviews with two board members and the manager was conducted in this cooperative and is included in Chapter 6.

The social capital survey used in Chapter 6 is based on the World Bank Social Capital Survey (Grootaert, 2004) and can be found in its entirety (translated into English) in Appendix 1. The 120 social capital surveys were divided among the five case study cooperatives based on the number of members in each cooperative. An attempt was made to interview 2% of the members of each of the five cooperatives, but only 1.4% of the membership of CoopeTarrazu was surveyed, due to the large size of the cooperative (2900 members), the large geographical area of the cooperative and time constraints.

Table 2 : Summary of interviews and surveys conducted.

Case Study Cooperative	Administrators Interviewed	Social Capital Surveys by author	Percent of membership surveyed	Farming Practices Interviews by author	Farming practices interviews by research assistant
CoopePilangosta	Manager, Sales manager	19	11	11	0
CooproNaranjo	Sales Manager, 4 agronomists	43	2	20	0
CoopeLlanoBonito	Manager, Agronomist, Board Member	13	2	0	25
CoopeTarrazu	Program Manager, Field Manager, Sales Manager	43	1.4	0	25
CoopeMontaña	Manager, 2 board members	2	3.7	0	0
Total	16	120		31	50

Two focus groups with members of CoopeLlano Bonito (one of the selected cooperative) were conducted to triangulate and verify results. A focus group/feedback session with managers at CooproNaranjo (one of the selected cooperative) was conducted to disseminate results and clarify timeline events.

Data Analysis

The results of the census of the twenty cooperatives were analyzed to find similarities and differences in the management and participation in certifications and to create a typology of cooperatives in relation to certifications. First, the relevant dimensions of analysis were determined to be the number of certifications in which the cooperative participate and the extent to which they participate (the percentage of the total harvest sold in each certification). Next the cooperatives were grouped by these relevant dimensions. The relationship between the relevant dimensions and the subordinate dimensions (number of members, size of harvest, motivations for certification) was analyzed and four types were developed. In the final stage of analysis, the four types were characterized and described. These descriptions can be found in the Methods section of Chapter 4.

A cross-case thematic analysis of the four separate case studies (and, for Chapter 6, the mini-case study) was conducted (Sibelet et al., 2013). In this analysis several important themes of general interest were identified regarding organizational management. These themes include organizational culture, engagement and partnerships with stakeholders, structures of incentives and payments, advisory services and engagement in certifications. The outputs of this analysis were used to construct Tables 2 and 3 in Chapter 5 and Table 15 in Chapter 6.

The four case study cooperatives were further analyzed using a time line analysis to determine changes in services provided to members and farming practices and the factors which influenced those changes. The timeline analysis used data from the farming practices interviews from the four cooperatives, the dates of implementation of certifications in each cooperative, the evolution of services in the cooperatives and partnerships and programs with stakeholders. Chapter 5 describes the results of the timeline analysis.

Chapter 3: Costa Rica's Coffee Cooperative Sector

Abstract

Costa Rica provides an interesting setting to broaden the study of voluntary certifications. Governmental regulation ensures that producers are paid a minimum share of the added value of the coffee chain and that coffee quality meets export standards. The supply chain within Costa Rica is short: producers sell directly to private or cooperative-owned mills. This eliminates middlemen who would buy coffee at the farm gate at below national market prices.

Cooperatives play an important role in Costa Rica's coffee industry. This chapter provides an overview of the cooperatives by region. Each region produces a different quality of coffee in function with the elevation.

Résumé

Le Costa Rica offre un cadre intéressant permettant d'élargir l'étude de la certification volontaire. La réglementation gouvernementale s'assure que les producteurs reçoivent une part minimum de la valeur ajoutée de la filière du café, et que la qualité du produit soit conforme aux normes d'exportation. La chaîne d'approvisionnement au Costa Rica est courte : les producteurs vendent directement aux moulins privés ou aux moulins appartenant aux coopératives. Il n'y a donc pas d'intermédiaires qui achètent du café à la ferme en-dessous du prix du marché national.

Les coopératives jouent un rôle important dans le secteur du café du Costa Rica. Ce chapitre donne un aperçu des coopératives par région. Chaque région produit une qualité différente de café, en fonction de l'altitude.

Resumen

Costa Rica ofrece un escenario interesante para ampliar el estudio de las certificaciones voluntarias. La regulación gubernamental asegura que los productores reciben un porcentaje mínimo del valor añadido de la cadena del café y que la calidad del café cumple con los estándares de exportación. La

cadena de suministro dentro de Costa Rica es corto: los productores venden directamente a las fábricas privadas o las cooperativas. Esto elimina los intermediarios que iba a comprar un café en la puerta de la granja a precios por debajo del mercado nacional.

Las cooperativas desempeñan un papel importante en la industria del café en Costa Rica. En este capítulo se proporciona una visión general de las cooperativas por región. Cada región produce una calidad diferente de café en función de la altitud.

The Coffee Industry in Costa Rica

In Costa Rica, coffee production is the principal source of income for 50,000 farmers. Ninety-two percent of these farmers have fewer than five hectares of land. These small and medium-holder farmers account for 40% of Costa Rica's annual harvest (Icafe, 2013b). Coffee production in Costa Rica is highly technified and input-intensive (Rice, 2015).

Classifications of Coffee Quality in Costa Rica

The quality and price of coffee is largely dependent on the elevation at which it was produced (Bosselmann et al., 2009). Coffee quality in Costa Rica is classified as Strictly Hard Bean (SHB), Good Hard Bean (GHB), Hard Bean (HB), Medium Hard Bean (MHB), Medium Grown Atlantic (MGA), Low Grown Atlantic (LGA) and Pacific (P) (Castro, 2013); the first four of which are the most commonly produced in the cooperatives studied. See Table 3 for a summary of the coffee qualities found in regions with cooperatives.

SHB is mainly grown between 1200 and 1700 meters above sea level (masl) in the Central Valley and Tarrazú, with some production in Coto Brus. SHB is valued for the hardness of the bean and its high acidity, body and aroma. GHB is produced between 1000 and 1200 masl, mainly in the West Valley. It is also known for the hardness of the bean and high acidity. Some lots have excellent aroma. HB is produced between 800 and 1200 masl in Guanacaste and parts of the West Valley. It has good body and aroma, but lower acidity than the previous varieties. MHB is produced at 400-1200 masl in Coto Brus and has medium hardness, body and aroma (Castro, 2013).

Table 3: Classifications of coffee quality found in regions with cooperatives.

Classification	Elevation (meters above sea level)	Main Regions of Production
Strictly Hard Bean (SHB)	1200-1700	Central Valley, Tarrazú, Trés Rios
Good Hard Bean (GHB)	1000-1200	West Valley
Hard Bean (HB)	800-1200	Guanacaste, West Valley
Medium Hard Bean (MHB)	400-1200	Coto Brus

Costa Rica's coffee industry is carefully regulated by the National Coffee Institute (Icafe). Relationships between producers and mills were clarified in the Law of Relations of 1933. The law is a result of many conflicts between producers and millers which began at the end of the 19th century. Before the law, the coffee industry was characterized by usurious lending practices on the part of the mills and below-market-prices paid to producers (N. L. Babin, 2012). This legislation increased the transparency of transactions between producers and millers and protected producers from the predatory practices that were complained about in the past (Castro, 2013). The law also created the Board of Sales (*Junta de Liquidaciones*) which fixed the final price paid to producers. Even though this law was not well-enforced, it represented an important step in the changing relationship between producers and millers (Castro, 2013).

In 1948 the Oficina del Café (later Icafe) was created as an institution semi-autonomous from the state. Its five-member board of directors represented producers, millers, roasters and exporters. Its mission was to apply the Law of 1933 (Castro, 2013).

The next step in regulating the relationship between producers, millers and exporters was Law 2762 which was passed in 1961 (Icafe, 1961). It clarified the legal price paid to producers. The law also prevented pre-harvest contract sales of coffee as well as price-to-be-fixed contracts in an attempt to protect producers from below-market prices (Castro, 2013). Addendums to the law require that the harvest is sold directly to the mill, effectively outlawing the existence of coyotes, or middlemen who buy coffee cherries directly from farmers at below-market prices (Icafe, 1961).

Addendums to this law also regulate the quality of export coffee. The law stipulates amount of unripe coffee beans a mill can accept (2%), the minimum profit that mills can retain, and outlaws the production of the species *robusta* and certain inferior cultivars of *arabica* (Icafe, 1961).

Producers deliver their harvest to either private or cooperative-owned mills. Mills may export the green coffee directly, sell the coffee to an exporter, or sell the coffee to a roaster for domestic consumption (Icafe, 2013b). See Figure 1.

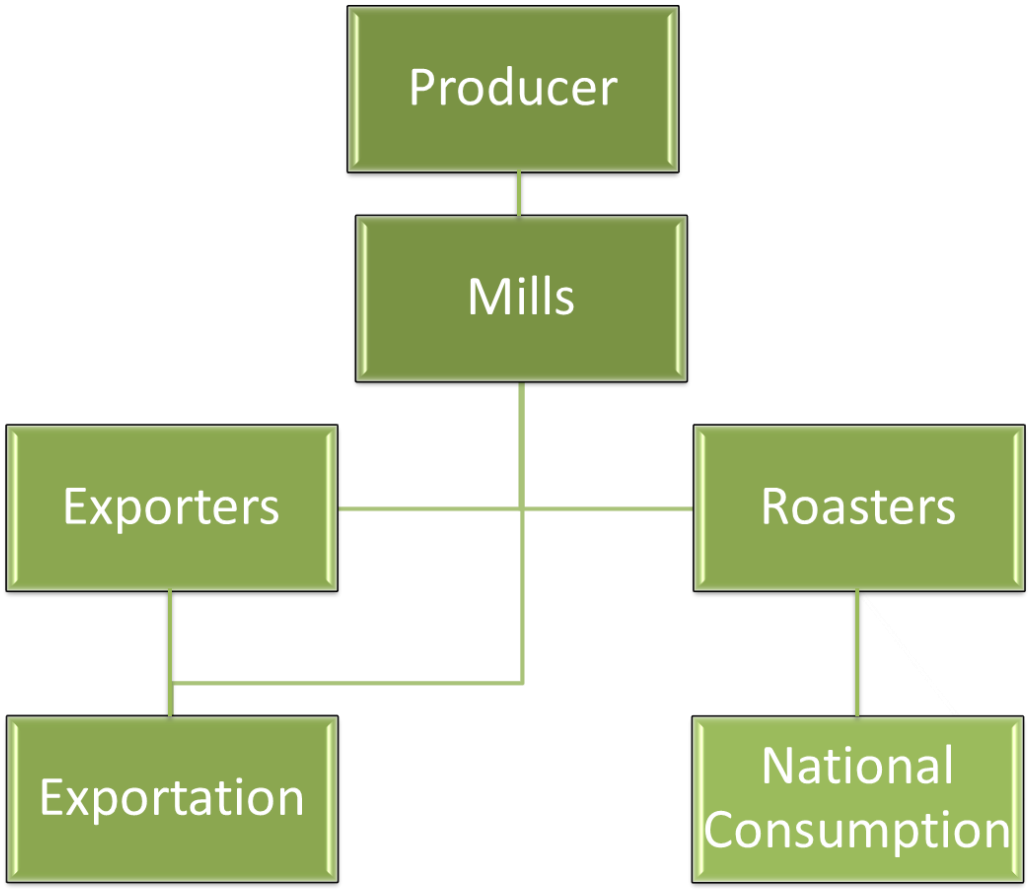

Figure 1: Structure of the Costa Rican Coffee Industry. Adapted from Icafe (2013b).

At the time of the harvest, farmers receive payment for the cherries delivered to the mill. The price the mills pay to farmers is posted at the collection sites, or receivers (Castro, 2013). At cooperative mills this is called an *adelanto*, or an advance, because the mill has not yet been paid by the buyer. However, from the point of view of the farmer, this payment comes at the end of the production season (Luetchford, 2008). Cooperatives will pay up to two more 'adjustments' throughout the season to distribute profits to the members. Private mills do not pay adjustments (Castro, 2013).

Farmers' organizations in Costa Rica's coffee industry

Collective action has a long history in the coffee industry in Costa Rica. The first recorded meeting of coffee producers organizing to defend their interests is in 1903 in the region of Tres Ríos. In the following forty years producers in other regions of the country met to '*free themselves from the*

tyranny of the mills' (Castro, 2013). Farmers' organizations in Costa Rica are classified into associations, cooperatives and consortia, each of which are governed by different legislation (Faure, Le Coq, & Rodriguez, 2011). The *Ley de Asociaciones 218* governs associations and the Ley del Cooperativismo 4179 governs cooperatives (Gobierno de Costa Rica, 1968). Costa Rica's first cooperative mill was CoopeVictoria in Grecia, West Valley. CoopeVictoria was formed in 1943 when the Costa Rican government seized the private mill of the German Niehaus family and allowed the producers in the area to form a cooperative (Castro, 2013). The 1960s saw an increase in the development of the coffee cooperative sector. Cooperatives opened nearly every year between 1958 and 1972 in all coffee-growing regions of the country (Castro, 2013). The 1960s also saw the creation of the Federation of Cooperatives of Coffee Growers (FEDECOOP) which was created to increase cooperatives' agency in exportation (N. L. Babin, 2012). Cooperatives purchase ripe coffee cherries from members and provide services such as milling, commercialization, credit, training, advisory services.

Today approximately 40% of exports are processed by cooperative-owned mills (Icafe, 2013b). The policies that support the cooperative sector have been credited with preserving small-holder agriculture and easing rural unrest (N. L. Babin, 2012). Cooperatives are an important vehicle for communicating new information to producers and providing access to services, such as marketing, credit and access to affordable inputs (Luetchford, 2008). Members of cooperatives are more likely to employ new agricultural practices than small non-affiliated producers and cooperatives are more likely than private mills to employ an agronomist to give agricultural advice to members (Castro, 2013).

Costa Rican Cooperatives and Regions

Costa Rica is divided into eight coffee-growing regions, six of which have active cooperatives. Cooperatives are found in the Central and West Valleys (*Valle Central* and *Valle Occidental*), Trés Rios, Tarrazú, Guanacaste and Coto Brus (Brunca). No cooperatives are located in Orosi or Turrialba

(See Figure 2). Cooperatives are diverse and for example vary greatly in size from CoopeSantaElena in Monteverde with 25 members to CoopeTarrazu in Tarrazú with 2900 members.

Figure 2: Map of coffee producing areas in Costa Rica and location of coffee cooperatives. Red stars indicate cooperatives which were visited for this study. Purple stars indicate cooperatives which were not visited. Source, (Icafe, 2013b).

Central Valley, West Valley and Trés Rios Cooperatives

Coffee production began at the end of the eighteenth century in the Central Valley and at the beginning of the nineteenth century in the West Valley. These were the first areas of coffee production in Costa Rica and they enjoy close proximity to the capital (Icafe, 2013b). Together the two regions harvested 37% of the country's coffee in the 2013/2014 season (Icafe, 2014).

Cooperatives in the Central Valley are CoopeAlejuela and CoopeLibertad. Cooperatives in the West Valley are CoopeVictoria, CoopeMontaña, CooproNaranjo, CoopePalmares and CoopeAtenas. CoopeUnion is located in Trés Rios.

Tarrazú Cooperatives

Coffee production began in the Tarrazú (Los Santos) region at the time when the last cultivable land in the Central and West Valleys had already been claimed (Icafe, 2013b). Tarrazu is an important region for coffee production in Costa Rica, and produced 40% of the national harvest in the 2013/2014 harvest season (Icafe, 2014). The Tarrazú region has three coffee cooperatives, CoopeLlano Bonito, CoopeTarrazú and CoopeDota, which are located in the highest elevations of the region. Coffee production is important to the economy of the region and there is a lot of competition from private micro-mills. The Tarrazú region (along with the West Valley) produces some of the highest quality coffee in Costa Rica.

Guanacaste Cooperatives

The Guanacaste region is composed of the cantons of Guanacaste, Puntarenas and Alajuela and is located in the north of the country. Most of the production in this area is between 600 and 1000 meters above sea level, with the exception of the Monteverde area which ranges from 600 to 1350 meters above sea level (Icafe, 2013b). This region produced less that 2% of the Costa Rica's 2013/2014 harvest (Icafe, 2014).

Guanacaste cooperatives are CoopePilangosta, CoopeCerro Azul, Coope Santa Elena, CoopEl Dos, CoopeMontes de Oro, and CoopeSarapiquí. Due to its remote location and financial instability, CoopeMontes de Oro was not visited for this study.

Coto Brus (Brunca) Cooperatives

Coffee production moved into Coto Brus in the 1960s. The Coto Brus region produced 16% of the Costa Rican coffee harvest in 2013/2014 (Icafe, 2014). The coffee plantations in this region are more fragmented than in the historic centers of production like the Central Valley. This has resulted in smaller farm size and fewer large estates in this region (N. Babin, 2014).

There is a cluster of three cooperatives in Coto Brus near the Panamanian border: CoopeSan Vito, CoopeSabalito and CoopePueblos. CoopeAgri is located farther north in San Isidro de El General. CoopeAngeles is also located in this area but was not visited due to the remote location and the lack of viable contact information. It is not included in the data in this document. All are cooperatives of small-scale farmers located over 250 km from the capital.

Because of the diversity of the described above, cooperatives in the different regions choose to pursue different certifications based on the quality and amount of coffee produced, as well as on their individual marketing strategies. The factors which determine the extent of participation of different types of cooperatives are further discussed in Chapter 4. The choices that cooperatives make regarding the management of certifications and the market incentives which influence these choices have implications for the promotion of sustainable farming practices (Chapter 5) and on the equality and solidarity within the cooperative (Chapter 6). The frequency of certifications is summarized in Figure 3, which is based on the results of the census of cooperatives.

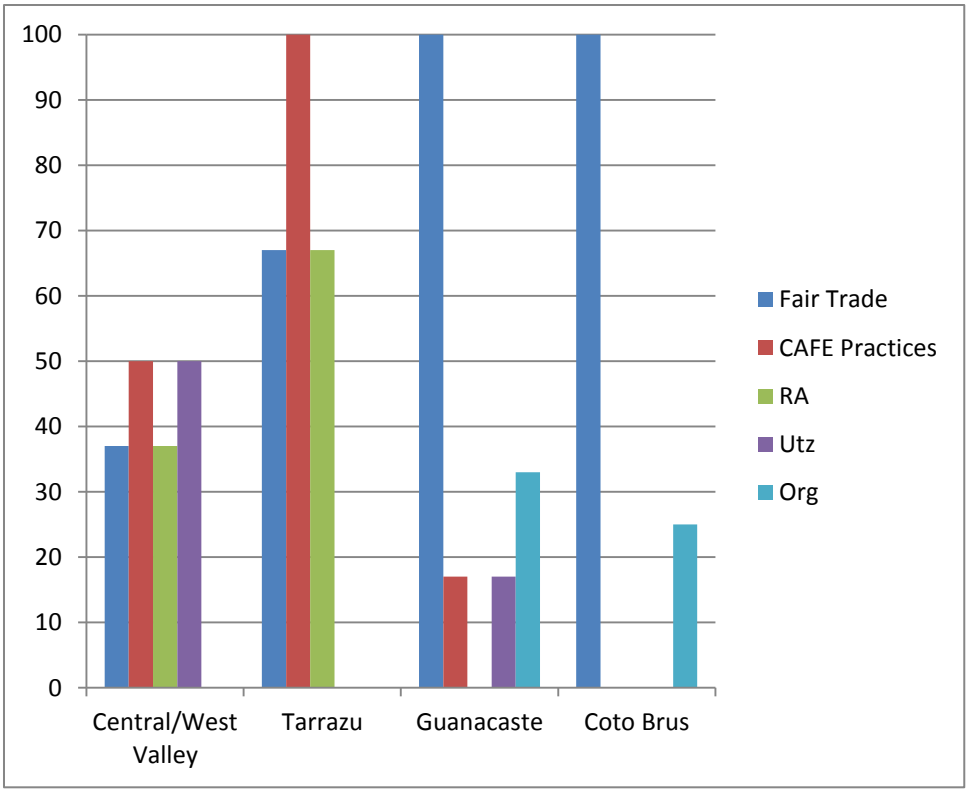

Figure 3 : Cooperatives' participation in certifications by region. ***Source: Author's data.***

Chapter 4: Small Farmer Cooperatives and Voluntary Coffee Certifications: Rewarding Progressive Farmers or Engendering Widespread Sustainability in Costa Rica?

Based on a manuscript by

Anna Snider, Guy Faure, Isabel Gutiérrez, Nicole Sibelet

submitted for publication

Abstract

To better understand how certifications function in the social and political milieu of Costa Rican coffee cooperatives, we must first understand the role that cooperatives play in the management of voluntary certifications and what factors cooperative administrators consider when making decisions regarding their participation in certifications. The information presented in this chapter will be further analyzed in subsequent chapter to better understand effects of certifications at the cooperative level and how management decisions are influenced by the social context of the cooperative sector.

A census of twenty cooperatives from all coffee-producing regions was conducted to gather basic information regarding participation in and management of certifications. Cooperatives were then grouped by participation in certifications, and four different types of cooperatives emerged. Four cooperatives of different types were selected for case studies to further explore the role of cooperatives in the management of certifications.

Our research examines the role cooperatives play in helping smallholder farmers access coffee certifications and addresses the discrepancy in the literature about financial incentives paid to farmers and cooperatives. Costa Rican cooperatives participate in a variety of certifications, with many holding two or more certifications. Price incentives and demand for certified coffee often fluctuate with the global coffee market. There are no significant or consistent financial incentives for farmers to pursue certification. Multiple certifications may lower auditing and implementation costs, but cooperatives rarely receive the full premium for multiply-certified coffee. Low market demand for certified coffee, weak price incentives and high auditing and management costs encourage cooperatives to certify only a portion of their members. This strategy rewards compliant farmers rather than inducing widespread change to farming practices among the entire membership. Cooperatives may provide in-kind support to farmers such as the provision of equipment or plant material or offer specialized training to help members comply with certification. Though financial

incentives are weak, certifications offer non-financial benefits to both farmers and cooperatives, including better management and more resilient cooperatives.

Résumé

Pour mieux comprendre comment les certifications fonctionnent dans le contexte social et politique des coopératives de café du Costa Rica, nous devons d'abord comprendre le rôle que jouent les coopératives dans la gestion des certifications volontaires, et quels facteurs les administrateurs des coopératives considèrent lorsqu'ils prennent les décisions concernant leur participation aux certifications. L'information présentée dans ce chapitre sera analysée dans le chapitre suivant afin de mieux comprendre les effets des certifications au niveau de la coopérative, ainsi que l'influence du contexte social sur les décisions de gestion du secteur coopératif.

Un recensement de vingt coopératives issues de toutes les régions productrices de café a été réalisé afin de recueillir des informations de base concernant la participation à la certification ainsi que sa gestion. Les coopératives ont ensuite été regroupées en fonction de la participation à des certifications, et quatre différents types de coopératives ont été identifiés. Quatre coopératives de différents types ont été sélectionnés pour réaliser des études de cas visant à explorer le rôle des coopératives dans la gestion des certifications.

Notre recherche examine le rôle que jouent les coopératives dans le soutien de l'accès des petits producteurs à la certification et il aborde les divergences dans la littérature à propos des incitations financières payées aux agriculteurs et aux coopératives. Les coopératives costaricaines participent à plusieurs types de certifications, beaucoup d'entre elles ayant deux certifications ou plus. Le prix et la demande pour le café certifié fluctuent souvent avec le marché mondial du café. Il n'y a pas d'incitation financière significative pour les agriculteurs à poursuivre la certification. L'utilisation de multiples certifications peut abaisser les coûts d'audit et de mise en œuvre, mais les coopératives reçoivent rarement la totalité de la prime pour la combinaison de plusieurs certifications. Les coopératives sont encouragées à certifier seulement une partie de leurs membres du fait de la faible

demande pour du café certifié, de la faiblesse des motivations économiques et des coûts élevés d'audit et de gestion. Cette stratégie récompense les agriculteurs conformes au lieu de provoquer un changement général des pratiques agricoles de l'ensemble des membres. Les coopératives peuvent fournir un soutien en nature aux agriculteurs, tels que de l'équipement et du matériel végétal, ou offrir une formation spécialisée visant à aider les membres à se conformer à la certification. Bien que les motivations financières soient faibles, les certifications offrent des avantages non-financiers aux agriculteurs et aux coopératives, incluant une meilleure gestion, et des coopératives plus résilients.

Resumen

Para entender mejor cómo las certificaciones funcionan en el medio social y política de las cooperativas de café de Costa Rica, primero tenemos que entender el papel que desempeñan las cooperativas en la gestión de certificaciones voluntarias y los factores que los administradores de cooperativas consideran al tomar decisiones con respecto a su participación en las certificaciones. La información presentada en este capítulo se examinará en profundidad en el capítulo posterior para comprender mejor los efectos de las certificaciones a nivel de cooperativas y cómo las decisiones de gestión se ven influidas por el contexto social del sector cooperativo.

Un censo de veinte cooperativas de todas las regiones productoras de café se llevó a cabo para recopilar información básica relacionada a la participación en la gestión y de las certificaciones. Las cooperativas fueron agrupadas según su participación en las certificaciones, emergiendo cuatro tipos diferentes de cooperativas. Se seleccionaron cuatro cooperativas de diferentes tipos de casos de estudio para explorar aún más el papel de las cooperativas en la gestión de certificaciones.

Nuestra investigación examina el papel que las cooperativas desempeñan en ayudar a los pequeños agricultores a acceder a certificaciones de café y se dirige a la discrepancia en la literatura acerca de los incentivos financieros pagados a los agricultores y cooperativas. Las cooperativas de Costa Rica participan en una gran variedad de certificaciones, muchas de ellas con dos o más certificaciones. Los incentivos de precio y la demanda de café certificado suelen fluctuar con el mercado mundial del

café. No existen incentivos financieros significativos ni consistentes para que los agricultores busquen la certificación. La participación en múltiples certificaciones pueden reducir los costos de implementación y auditoría, pero rara vez las cooperativas reciben el total de la prima por el café múltiplemente certificado. La baja demanda para el café certificado, los débiles incentivos de precios y altos costos de auditoría y gestión animan a las cooperativas para certificar sólo una parte de sus asociados. Esta estrategia es más una recompensa a los agricultores que cumplen en lugar de inducir un cambio generalizado de las prácticas agrícolas entre todos los miembros. Las cooperativas pueden proporcionar apoyo en especie a los agricultores, tales como la provisión de equipo o material vegetal u ofrecer una formación especializada para ayudar a los miembros quienes cumplen con la certificación. Aunque los incentivos financieros son débiles, las certificaciones ofrecen beneficios no financieros a los agricultores y a las cooperativas, incluidas una mejor gestión de las cooperativas y mayor capacidad de recuperación.

Introduction

Voluntary coffee certifications, such as Fair Trade and Rainforest Alliance, have attempted to de-commoditize coffee and mitigate the effects of the crisis of coffee prices (Muradian & Pelupessy, 2005). Certifications were created with the broad goal of creating a segment of the specialty coffee market (Daviron & Ponte, 2005) in which social, economic and/or environmental production practices are verified and incentivized (Rice, 2015), however the distribution of financial incentives along the value chain is not always transparent (Daviron & Vagneron, 2011).

Coffee certifications, in particular Fair Trade, have been found to be an effective tool in improving the livelihoods of producers (Bacon, Mendez, Gomez, Stuart, & Flores, 2008) while other authors highlight modest effects on producer income, particularly during times of economic crisis (Lyon, 2007; Raynolds, 2002; Ruben, Fort, & Zuñiga-Arias, 2009). Notwithstanding this evidence on the positive impact on producers' wellbeing, coffee certifications receive criticism in the popular press for not significantly affecting farmer livelihoods. Some studies highlight the meager economic benefits associated with certifications while ignoring the non-economic benefits that certifications offer to farmers and their organizations (Omidvar & Giannakas, 2015). Other studies find that environmental change at the farm level is limited by self-selection of compliant farmers (Kirumba & Pinard, 2010).

Intersectoral partnerships for certified coffee often favor estates over small-holder farmers (Bitzer, Francken, & Glasbergen, 2008). Without the assistance of farmers' organizations, small-holders cannot access certifications or their benefits (Wollni & Zeller, 2007). It has been argued that the certification strategies of cooperatives have little effect on the gross margins to its members (Beuchelt & Zeller, 2013), yet other studies have shown that certifications, particularly Fair Trade, strengthen cooperatives (Bacon, 2005; Ronchi, 2002; Ruben et al., 2009). For these reasons it is important to have a better understanding of what factors cooperatives consider when making decisions about certifications and which strategies they use to manage them.

Despite the research available on the effect of certifications on producer livelihoods, little work is directed toward the role cooperatives play in the process of certification, with the exception of Fair Trade (Ronchi, 2002; Valkila & Nygren, 2010) and to a lesser extent, certified organic (Mutersbaugh, 2002). Farmers' organizations are not only intermediaries between different certification agencies and the producers, they represent the actors who participate fully in decisions relative to certification such as which certifications to pursue, how many and which members to certify and how to distribute the profits, if any, from selling certified products (Faure, Le Coq, et al., 2012). The dynamics of the global market for certified coffee and the certification standards themselves influence how farmers' organizations manage certifications. This research examines the influence and implications certifications have on these management decisions, using a case study of Costa Rica.

The Costa Rican Coffee Sector

Costa Rica has a long history of collective action in the coffee industry, starting in 1903 when farmers first organized themselves to defend their interests against large exporters (Castro, 2013). Many cooperatives entered into the certified coffee market with Fair Trade certification, which was first available in Costa Rica in 1988 (Luetchford, 2008). Costa Rica is an important producer of certified coffee and its production of standard-compliant coffee approaches 30% of the country's total production (Potts et al., 2014).

Unlike many of its Latin American neighbors, coffee production in Costa Rica is dominated by small-holder farmers. Ninety-two percent of the nation's coffee farmers have farms of less than 5 hectares. The harvest from farms of less than 5 hectares represents 40.5% of the nation's total harvest (Icafe, 2014). Costa Rica is Central America's fourth-largest coffee producer, after Honduras, Nicaragua and Guatemala (International Coffee Organization, 2015). The majority of coffee production in Costa Rica is under at least one species of shade tree (Instituto Nacional de Estadisticas y Censos, 2007) and is heavily-dependent on agrochemical inputs (Rice, 1999).

In Costa Rica, farmers' organizations are classified into associations, cooperatives and consortia of cooperatives, each classification enjoying a distinct legal status (Faure et al., 2011). Cooperatives of small farmers own 10% of the coffee mills in Costa Rica and process 40% of the coffee produced in Costa Rica (Icafe, 2013a). Cooperatives are firms owned by their members and distribute profits to their members at the end of every year (Gobierno de Costa Rica, 1968). Consortia are second-level cooperatives, or groups of cooperatives. Cooperatives (Faure, Le Coq, et al., 2012) and consortia (Ronchi, 2002) are the most important modes in which small farmers in Costa Rica access coffee certifications[1]. In this article we will consider only cooperatives and consortia of cooperatives because of their importance in the certification process.

Costa Rica's coffee sector is regulated by the government through the semi-autonomous Costa Rican Coffee Institute (Icafe). The quality and reputation of Costa Rican coffee is carefully protected by Icafe, which prohibits the production of the species *robusta* (Castro, 2013) and certain cultivars of *arabica* (Icafe, 2013b) and prohibits mills from accepting deliveries with greater than 2% unripe cherries (Icafe, 1961). Costa Rica also regulates quality by retaining 2% of the lowest quality coffee from the export market (Varangis, 2003). Icafe protects producers by limiting the amount mills can charge for their services and requiring that mills receive deliveries directly from producers (Icafe, 1961), effectively outlawing coyotes, or middlemen who buy coffee at the farmgate at below-market prices.

For these reasons Costa Rica is an appropriate country in which to study how small farmer cooperatives manage voluntary coffee certifications and to examine how the dynamics of the industry affect these cooperatives.

Voluntary Coffee Certifications and Global Production

There are numerous voluntary coffee certifications currently available to producers and consumers. The most important in terms of volume is 4C, which accounts for 22% of global coffee production (Potts et al., 2014). The goal of 4C certification, which focuses on environmental and social criteria, is

the mainstreaming of sustainable coffee. Therefore the certification standards are less strict than those for other certifications (4C Association, 2012), which accounts for the large supply of certified product.

Utz certified coffee accounts for 9% of global production (Potts et al., 2014). Standards are based on EurepGap criteria and focus on social and environmental aspects of farming practices (Utz Certified, 2015). Traceability is also an important aspect of Utz certification, which originally emerged as an industry-led initiative (Raynolds et al., 2007).

CAFE (Coffee and Farmer Equity) Practices is the verified sourcing program of the Starbucks Corporation and accounts for 6% of global production (Potts et al., 2014). Standards focus on traceability and origin, issues at the heart of the company's mission to provide 'the finest coffee' (Raynolds, 2009) but also include requirements in social responsibility and environmental leadership (Starbucks Coffee Company, 2012).

Fair Trade, which accounts for 5% of global production (Potts et al., 2014), is the only certification which requires that producers are organized in a democratic organization and the only certification program with a minimum price. The certification also includes a $0.20/pound social premium. Members are required to vote annually on how this social premium will be distributed. The certification focuses on environmental and social standards (Fairtrade International, 2014).

Rainforest Alliance-compliant coffee accounts for 3% of global production (Potts et al., 2014). Rainforest Alliance is the certification program of the Sustainable Agriculture Network (SAN). Standards focus on wildlife conservation and workers' welfare and are based on the principle of integrated pest management and the reduced use of agrochemicals (Rainforest Alliance & SalvaNatura, 2010).

Organic-compliant production comprises 3% of the world's coffee production (Potts et al., 2014). Organic certification is mainly focused on small farms. Standards strictly regulate the use of agrochemicals (Raynolds et al., 2007).

Nespresso AAA is the quality and sustainability program of Nestlé and accounts for 3% of global standard-compliant production (Potts et al., 2014). The standards are based on the SAN standards of Rainforest Alliance, but with fewer social requirements and higher quality (organoleptic) standards (Soto & Le Coq, 2011).

While the market for certified coffee is growing, so is the gap between the production of standard-compliant coffee and the sales of certified coffee. Sales of certified coffee accounted for only 8% of global exports in 2009, less than half of the global supply of standard-compliant coffee (Potts, Van Der Meer, & Daitchman, 2010). The insufficient demand for certified coffee means that standard-compliant coffee must often be sold on the conventional market (Sick, 2008). Low demand limits the number of cooperatives that can participate in certifications (Muradian & Pelupessy, 2005), undermining potential upgrades to the sustainability of farms and cooperatives.

In 2012 sales of certified-compliant coffee rose to 12% of global exports and production of certified-compliant coffee reached 49% of global exports (Potts et al., 2014). Production of standard-compliant coffee is dominated by Latin America, with Brazil producing 40% of the world supply, followed by Colombia (17%), Vietnam (15%), Peru (6%) and Honduras (3%). Costa Rica produces 1% of the world's supply of standard-compliant coffee (Potts et al., 2014).

This research attempts to clarify the role of cooperatives in the certification process and the dynamics of financial and non-financial incentives for producers and cooperatives. Section 3.1 examines the strategies and methods that Costa Rican coffee cooperatives use to implement and the factors that cooperatives consider when developing these strategies. Section 3.2 addresses the financial incentives paid to small farmer cooperatives and how these incentives fluctuate with changes in the world price of coffee and with different certifications. Section 3.3 addresses whether

the certifications provide a direct financial incentive to members or in-kind contributions. We conclude with some perspectives on certifications in the global market.

Materials and Methods

This study is based on field data collected in two phases in 2013 and 2014 with follow-up communications with participants in 2015. Data focus on the management of certifications at the cooperative level. Phase one consisted of semi-structured interviews (N. Sibelet et al., 2013) with twenty-one managers, eight agronomist/technicians, two bookkeepers and eight board members of twenty of the twenty-two coffee cooperatives in Costa Rica. The remaining two cooperatives were not visited because of geographical remoteness. Interviews collected both quantitative (number of members, amount of coffee processed in the past harvest, amount of certified coffee produced and sold, number of members and area of land included in various certifications, auditing fees, premiums and differentials received for certified coffee in current and past years, etc.) and qualitative data (strategy of the cooperative, method of managing certifications, reasons for pursuing certifications, product separation and traceability, strategies for paying farmers etc.). The data in this paper also include a review of cooperative assembly minutes, newsletters and policy documents. Pricing data is from examples given by cooperative managers and not from an analysis of contracts. We analyzed managerial practices and decision making processes. Data from the twenty cooperatives were compiled and analyzed based on the size of the cooperatives, the class of coffee produced and the geographical location of the cooperative. Data is not available for all cooperatives for all harvests. As not all cooperatives participate in all certifications, pricing data for certifications are not applicable to all cooperatives.

Phase two consisted of an analysis of both qualitative and quantitative data from case studies (Yin, 2009) of four cooperatives. Data were collected at farm level at Cooperatives numbers 1, 3, 6 and 19 as part of a larger study on certifications. The four case-study cooperatives were chosen for their diversity of type (according to a typology developed in Phase one and described below), geographical

diversity and diversity of certifications (See Table 3). A stratified sample of one hundred twenty members from the four cooperatives was surveyed about their perceptions of the management of the cooperative, certifications and incentives. Members were also asked about their participation in activities of the cooperative and their farming practices. Their opinions are reflected in this work as direct quotes. Interviews were conducted in Spanish, the first language of the interviewees, and quotes were translated by the first author. Two focus groups were held at Cooperative 1, each with twenty farmers participating, to determine the farmers' knowledge about and interest in certifications and to confirm conclusions from the individual interviews. Interview data were processed and interpreted according the thematic analysis method described in Sibelet et al. (2013).

Table 3: Summary of case study cooperatives.

Case Study Coop	Region	Size	Type	Certifications
Coop 1	Tarrazú	Small	2	Fair Trade, CAFE Practices
Coop 3	Guanacaste	Small	1	Fair Trade, Organic
Coop 6	West Valley	Large	4	CAFE Practices, Utz, Rainforest Alliance, AAA
Coop 19	Tarrazú	Large	4	CAFE Practices, Fair Trade, Rainforest Alliance, Harvested by Women

The results and conclusions generated were triangulated by interviews with leaders of consortia of cooperatives (Suscof, Coocafe and Cafecoop), certifying agencies, non-governmental organizations, governmental organizations and buyers of certified coffee. Data focuses on the management of certifications at the cooperative level.

Results and Discussion

Implementation of Certifications by Costa Rican Coffee Cooperatives

A Typology of Cooperatives

Costa Rican coffee cooperatives can be divided into small, medium and large cooperatives (See Table 4). This division is based on the quantity of green coffee processed by the cooperative, the number of members and the total surface area of the members' farms. Using this division, Costa Rica has twelve small coffee cooperatives, six medium and four large.

Table 4: Categorization of Costa Rican coffee cooperatives by size of harvest, number of members and total surface area.

Categorization of Coffee Cooperatives in Costa Rica by Size

	Small	Med	Large
Quantity of Harvest in 1000s of Kg*	<1150	1150-2300	>2300
Number of Members	<800	800-1400	>1400
Total surface area (ha) of members' farms	<1500	1500-4,000	>4000
Number of coops in category	12	6	4
*Based on 2012/2013 harvest			

Source: Authors' research

The majority of coffee cooperatives in Costa Rica (82%) have at least one coffee certification. Twenty-seven percent of the cooperatives have one certification, 23% have two, and 32% have three or more certifications. Fair Trade is the most popular certification in Costa Rica with 63% of the cooperatives participating and is mostly found among the small and medium cooperatives (See Figure 4).

CAFE Practices certification is held by 36% of the cooperatives and certification is well-distributed among small, medium and large cooperatives. However all of the eight cooperatives which participate in CAFE Practices (with one exception) are in areas of high elevation, that is to say they are producers of high-value coffee.

Rainforest Alliance and Utz certifications are both held by 23% of the cooperatives. These certifications are also concentrated among large and medium-sized cooperatives located at high elevations. Four cooperatives (18%) have organic certification. In Costa Rica organic certification is held only by small cooperatives which are located at low to mid elevations[2].

Fewer than 10% of the cooperatives in Costa Rica participate in other certifications such as Nepresso AAA, 4C and Harvested by Women, which made its first sales of certified coffee in 2013 and does not yet appear in world statistics of certified coffee (for more information see (International Trade Centre, 2012)). These less-popular certifications are mainly held by large cooperatives.

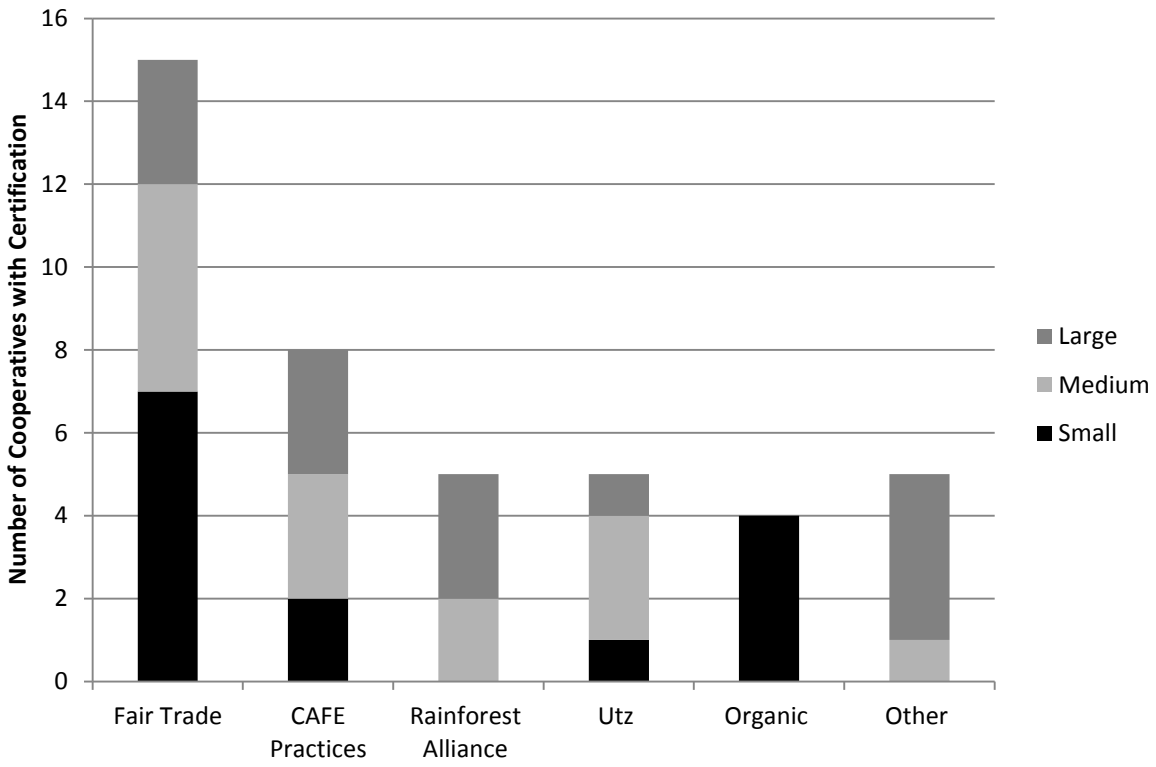

Figure 4: Distribution of certifications among the different sizes of cooperatives.

Costa Rican coffee cooperatives do not participate in certifications to the same extent. We categorized the twenty-two cooperatives based on the certifications in which they participate and the extent of their participation (percentage of total harvest sold in each certification). As we can see from Table 5, some patterns emerge in size, elevation and motivations for certifying.

Type 1 cooperatives are dependent on the consortium Coocafe for their participation in Fair Trade certification. They are all small cooperatives located in marginal coffee growing areas. These cooperatives may need Fair Trade to add value to their product for which demand is low (Kessari, 2011). Five of the six cooperatives in this group have had Fair Trade certification since it was first offered in Costa Rica. However, four of the cooperatives are certified but not active in Fair Trade due to financial difficulties. Those cooperatives in the group which currently actively participate in Fair Trade (N=2) sell at least 30% of their harvest with Fair Trade certification. Three of the four Costa Rican cooperatives which participate in organic certification are in this group.

Type 1 cooperatives pursue certifications for economic reasons, with the certification premium being the most important reason which was cited by 100% of the cooperatives in this group. One cooperative in this group added that entering new markets is also an important motivation.

Type 2 cooperatives have a medium to high dependence on certifications and sell 15-70% of their harvest as certified. They are small to medium in size and all but one are at mid elevations. All of the cooperatives in this group participate in Fair Trade and two currently participate in other certifications (CAFE Practices, organic, and Utz). Three of the four cooperatives in this group entered Fair Trade certification during the coffee crisis between 1999 and 2004, over ten years after it was first available in Costa Rica. The premium associated with certifications (Fair Trade in particular) is also very important to Type 2 cooperatives and was cited by 100% of the respondents. Unlike Type 1 cooperatives, Type 2 cooperatives recount many secondary reasons for adopting certifications. These motivations often include indirect benefits to members. Seventy-five percent of the cooperatives in this group cited these types of benefits, such as improving cultivation and pesticide handling practices, or access to more training for members. The agronomist at a small Type 2 cooperative stated that the biggest benefit of certifications '*is to protect the farmer. In the past the farmers stirred pesticides with their hands and did not wear personal protective equipment*.' Others (50%) cited entering new markets or client requests as an important motivation.

Type 3 is composed of small, medium and large cooperatives with very little participation in certifications. These cooperatives are located at mid to high elevations and generally find that, because their coffee is in high demand due to its quality and distinctive characteristics, they do not need to participate in certifications. The manager of one Type 3 cooperative says, '*Certifications are not worth the trouble.'*

Type 4 cooperatives are engaged in multiple certifications, but sell a small percentage of their total harvest in any one certification. They are medium (50%) to large (50%) in size and produce high quality coffee at high elevations. All cooperatives in this group participate in at least three certifications; all six are certified in CAFE Practices, five in Rainforest Alliance, four in Fair Trade, and three in Utz. These cooperatives find that the high demand for their coffee helps them compete in CAFE Practices and Rainforest Alliance and often become certified at the request of an existing buyer. A manager at Cooperative 6, a large Type 4 cooperative, said, '*We began with Rainforest Alliance because an important buyer…requested it and would only buy certified coffee*.' Four of the six Type 4 cooperatives pursue Fair Trade certification alongside other certifications. These cooperatives, which have more resources in terms of skilled employees and access to credit than Type 1 and 2 cooperatives, choose to manage the certification themselves, rather than through a consortium such as Coocafe. This allows them to focus on buyers who are looking for high quality Fair Trade coffee or buyers who are looking for double certifications, for example Fair Trade-CAFE Practices. Other cooperatives in this group find that other certifications or even conventional coffee are more lucrative options. A manager at Cooperative 6 stated *'Fair Trade is a good tool for strengthening small cooperatives in Guanacaste [the low-altitude coffee-growing areas], but cooperatives with high quality coffee do not need it.'*

Type 4 cooperatives were the only type to list environmental motivations for pursuing certifications. Five of the six cooperatives see certifications as opportunity to increase the environmental sustainability of the cooperative. A manager at Cooperative 19 explains, '*The certifications encourage*

sustainability, the application of their criteria in our programs of work has helped to improve these aspects in the farms and in the communities…we have improved the environmental conditions of our farms and the operation of our coffee mill [to a point where their operation has] almost no environmental impact.' Two of the six cooperatives have ambitious sustainability programs which predate their participation in certifications. They emphasize that the sustainability programs are not a result of certifications, but certifications help them achieve the goals of these programs by providing incentives to pursue alternative energy sources and increasing the environmental efficiency of the mill. Certification premiums are also an important motivation cited by 83% of the cooperatives.

Table 5: Typology of Costa Rican coffee cooperatives.

Characteristics	**Type 1** Small/Marginal Coocafe Dependent	**Type 2** Medium dependence on Fair Trade	**Type 3** Low to no participation in certifications	**Type 4** Diversified Certifications
Size	Small	Small/medium	Small to large	Medium/large
Elevation	Low to mid	Mid to high	Mid to High	High
Certifications	Fair Trade or FT/Organic	Fair Trade, may try other certifications, but they often find they cannot maintain them because of lack of demand or personnel	One or fewer certifications.	Three or more certifications
Amount of certified coffee sold	Financially-dependent on Coocafe. Those currently exporting sell at least 30% in Fair Trade.	Medium dependence on certification. Sell 15-60% of the harvest in Fair Trade.	<5% of harvest sold with certification	< 30% of total harvest sold in any one certification.
Reasons to certify	Premium	Financial but also to provide more services to members.	Little interest in certifications.	Request of important buyers and environmental reasons.
Number of cooperatives	6	4	6	6

Source: Authors' research

Not All Certified Coffee Finds a Market

Demand for certified coffee is low compared to supply. In Table 6 we can see that cooperatives can satisfy demand for certified coffee sales by certifying an average of only 5% of their members for Rainforest Alliance or 3% for Utz. Even though cooperatives may certify only a small percentage of their members, they may still find themselves with more certified coffee than potential buyers (See Table 4). The average of certified production to certified sales ranges from 30% with Fair Trade to 75% with organic. Fair Trade is the most extreme example because 100% of the cooperatives' farms must be certified, regardless of the demand for certified product.

Table 6: Certified coffee sold as percentage of certification-compliant coffee produced and as percentage of total harvest.

Certifications	Average % of members certified	Average percentage of certification-compliant production sold with certification	Average percentage of total harvest sold with certification
Fair Trade	100*	30	30
CAFE Practices	33	55	15
Rainforest Alliance	5	58	9
Utz	3	53	4
Organic	53	NA	3

*Fair Trade does not allow individual certification
NB: Data are from the 2012/13 harvest
Source: Authors' research

Costa Rican coffee cooperatives do a better-than-average job of matching certified production to certified sales by focusing on more selective certifications like CAFE Practices and Rainforest Alliance. Globally 25% of certification-compliant production is sold as certified coffee (Potts et al., 2014). A large part of the oversupply on the global level is due to the oversupply of 4C certified coffee, due to its low barriers to entry. When 4C certification is excluded from global averages, the proportion of production to sales becomes 56%, closer to Costa Rica's proportion of 53% for Utz, 55% for CAFE Practices and 58% for Rainforest Alliance.

Barriers to certifications

Cooperatives in Costa Rica are well-positioned to comply with certification standards because many of the requirements coincide with Costa Rican environmental and social laws and coffee sector regulations. With training (and a financial incentive to do so) Costa Rican farmers normally are able to comply with the certification requirements.

Because the majority of Costa Rican coffee farms have at least one species of shade tree (Instituto Nacional de Estadisticas y Censos, 2007) and because of technicalities in the certification standards which allow for the possibility of farms with minimal amounts of shade to be certified (Soto & Le Coq, 2011), planting shade trees in not considered a barrier to certification in Costa Rica.

Organic certification, however, remains a challenge and the majority of the members of Costa Rican cooperatives feel it is very difficult to implement. Coffee production in Costa Rica is input-intensive, and the transition to organic production results in a reduction in yield of about 50% (Kilian, Jones, Pratt, & Villalobos, 2006; Soto & Le Coq, 2011). In countries with lower average productivity in conventional production, such as Guatemala, where organic is on average 23% less productive than conventional or in Nicaragua, where the conversion to organic results in an average reduction in yield of 29%, organic production is more attractive (Soto & Le Coq, 2011).

However, Costa Rica does have a relative disadvantage when competing on the global certified-coffee market because high costs of production (Varangis, 2003). A mid-elevation Type 2 cooperative decided to discontinue its CAFE Practices certification because of this disadvantage. The cooperative was able to meet the requirements and flavor profile demanded by Starbucks. However, after one year with the certification this cooperative realized that there was no market for its coffee. A corporate buyer for Starbucks explains that, while the company does buy the class of coffee produced in this area, they often buy it from other countries where the final sale price is lower than the New York Stock Exchange (NYSE) price.

> *'We have a use for those coffees, but it is a matter of price. I have access to the same quality coffee at -$0.10 [per pound below the NYSE price] from Brazil….Their cost of production [in Brazil] is far far less than any country in Central America. It is very difficult for these countries to compete with…Brazil. That's the reality that many cooperatives [in Costa Rica] face.'*

Therefore, because of the high cost of production in Costa Rica, Fair Trade and organic certifications are often needed to add value to low elevation coffee, which is otherwise overpriced on the global market. Low elevation cooperatives produce high quality coffee (in terms of low percentage of diseased or unripe beans) in accordance with the strict Icafe standards. However low altitude coffee has different organoleptic qualities and is less sought-after on the world market.

Other certifications are effectively only available to the producers of high altitude coffee because buyers are willing to pay a premium for the quality and distinctive flavor profile.

Nevertheless, cooperatives with highly-demanded coffee may still have to limit their participation in certifications because of the strain certifications can put on the human resources of the cooperative. Small and medium-size cooperatives may not have enough employees to manage certifications, in particular agronomists, who must be available for farm visits, trainings and recordkeeping. As the sole agronomists at Cooperative 1 said, '*Two certifications is a lot [of work], three certifications would kill me*.'

The management costs of certifications may be substantial and include the implementation of an internal control system if one does not already exist, auditing costs, hiring of new employees, additional time spent in meetings and trainings and possible upgrades to the mill. Cooperatives often reserve a portion of the certification premium, if there is one, to cover the additional cost they must bear. Auditing costs per hectare vary greatly in function with the number of members certified and the size of the farmers' organization (Soto & Le Coq, 2011) and by the number of certifications that the organization holds. Cooperatives with multiple certifications may be able to receive a discount from auditors if the auditor is licensed to audit for multiple certifications. The agronomist from Cooperative 1, a small cooperative with two certifications explains,

> '*The audit can be made for two certifications [at the same time] with the visit of the same inspector who takes data at the field level, at the mill and the office level. In other words, one inspector visits the farms and the mill and we get a slightly reduced cost and the arrangements are made for two certifications*.'

Table 7 outlines the auditing costs incurred by cooperatives in 2013, but other, less easily quantifiable costs, can be substantial. These direct and indirect costs can be a significant barrier to the adoption of certifications, but as found in previous studies (Carlsen, Hansen, & Lund, 2012; Ton et al., 2007), cooperatives were not able to precisely quantify these costs.

Table 7: Average auditing costs incurred by cooperatives.

Certifications	Average annual audit costs per cooperative in US$*	Average annual audit costs per certified member, US$
Fair Trade	4500	10
CAFE Practices	3900	47
Rainforest Alliance	4500	163
Utz	2600	131
Organic	1500	150

*Data are from 2013

Deciding who to certify

Collective certification is a requirement of Fair Trade, but all other certifications allow cooperatives to certify a portion of their members. Despite this, some cooperatives still choose collective certifications because they feel that is it in line with the tenets of cooperativism: all members should be equal with equal payment and access to services. For this reason two cooperatives choose to certify all of their members in CAFE Practices certification even though both cooperatives sold less than 25% of their total harvest with the CAFE Practices certification in 2012/2013. The agronomist at Cooperative 1 clarifies, *'The message that we want to give to the producers is that everyone is equal.'* This means extra work for the technical staff in terms of farm visits and trainings for all members rather than just for a select few. However, this approach has greater potential to change farming practices, because cooperatives use the certification standards to improve the farming practices of all members, rather than as a reward for a small number of producers who already comply with the standards.

Collective certifications, however, are exceptional. Due to the limited demand for certified coffee and the difficulty of getting all members of a cooperative to comply with all of the certification guidelines, most cooperatives decide to certify only a portion of their members, often fewer than 5%. All cooperatives in Costa Rica with Rainforest Alliance and Utz certifications and 75% of cooperatives with CAFE Practices currently certify only individual farmers.

Certifying individual members is a strategy to reduce the costs of internal monitoring and external auditing. Individual certifications also reduce the strain on the technical staff, since certifications require agronomists and other technicians to visit farms more frequently to assist members in the implementation of new farming practices. In the case of individual certification the cooperative maintains ownership of the certification and manages all paperwork associated with it. This service is essential for small farmers' access to certifications. A member of cooperative 6 with five hectares certified in Rainforest Alliance explains *'Without the cooperative it wouldn't be worth the trouble to pursue certifications as a private farm. The coop takes care of all the certification paperwork.'* The certified members can sell certified coffee exclusively through the cooperative and are responsible for farm-level record keeping.

Cooperatives make the certifications available to all members, but in reality it is the farmers who attend most of the cooperatives' trainings and already comply with the majority of the rules of certification (do not use pesticides prohibited by certification, produce their crop under shade and have the facilities to store pesticides) who are aware of and participate in individual certifications. Cooperatives often approach the members they feel are the best candidates for certification. One certified member of Cooperative 19 said that the agronomists from the cooperative '*looked for me [to participate in Rainforest Alliance certification] because I had a lot of shade trees*.' Kirumba and Pinard (2010) observed the same strategy in Kenya, noting that individual certifications focus on rewarding progressive farmers rather than on uplifting weak farmers.

In addition to compliance with certification guidelines, cooperatives may give priority to larger farms or to farmers who have been loyal to the cooperative in the past, in other words, to farmers who do not side-sell to other mills.

Most uncertified members are unaware of the opportunities for certification in their cooperative. Eleven percent of uncertified farmers who are members of a cooperative which offers Rainforest Alliance certification (N=18) responded that they had knowledge of the certification. Even certified

members of cooperatives are often unfamiliar with certification. Seventeen percent of the farmers interviewed from cooperatives with collective CAFE Practices certification (N=41) were aware of the certification. Fair Trade enjoys more recognition among certified farmers, presumably because farmers must vote at assemblies on the how the certification premium will be distributed. Fifty-one percent of the members of Fair Trade-certified cooperatives (N=39) had heard of Fair Trade certification. While this lack of awareness of the opportunities and the tenets of certification compromises the producers' ability to make informed decisions about improving the sustainability of their farming systems, it also mitigates concerns about resentment or dismantling of solidarity between certified and uncertified producers. The decision between individual and collective certification remains a critical issue for cooperatives. On one hand, collective certification appeals to cooperatives with a strong ideology of equality. One the other hand, the strain that certifications put on the human resources of the cooperatives often makes individual certifications the only viable option.

Accessing Certifications Through Consortia

While cooperatives offer small-holder farmers access to certifications, cooperatives themselves may find that they cannot access certifications without technical assistance. There are three consortia, or second-level cooperatives, in Costa Rica (Coocafe, Suscof and Cafecoop) which help member cooperatives access certifications and/or market their coffee. Consortia are important to help small, resource-poor cooperatives access certification and to lower certification costs (Vandorpe, 2014) and it is on this premise that Coocafe was created.

Nine Type 1 and 2 cooperatives access Fair Trade through Coocafe. Coocafe builds capacity within the cooperatives, exports coffee and offers financing. Many member cooperatives would not have survived the coffee crisis without the help of Coocafe (Ronchi, 2002). The manager of Cooperative 17, a small cooperative facing financial trouble explains, '*We exist by the grace of Coocafe…They do not like to see member cooperatives fail*.'

The biggest barrier to Fair Trade certification for the small cooperatives is the lack of human resources. A manager at the Coocafe consortium explains, '*They may have one person acting as the manager and the agronomist*.' As the owner of the Fair Trade certification for nine disparate and geographically distant cooperatives, Coocafe takes on the risk of ensuring that members of all nine cooperatives comply with the certification standards. If an external auditor found a certified farmer at one cooperative committed a major infraction (for example the use of child labor), Coocafe, and consequently all nine member cooperatives, would lose its Fair Trade certification. This, as also noted by Mutersbaugh (2002), makes certified cooperatives dependent on the compliance of farmers in distant regions. Because of the high stakes of compliance, Coocafe offers mock-audits for member cooperatives before the third-party audits. The cooperative managers and former managers who were instrumental in the formation of Coocafe in 1988 agree that, were it not for the support of Coocafe, the small cooperatives would not have been able to access Fair Trade certification.

Nevertheless, as instrumental as Coocafe has been in helping small cooperatives access certifications, the costs can be high. Coocafe charges a high price for the services that they provide to member cooperatives (Sick, 2008) and has been accused of charging exorbitant interest rates for credit (N. L. Babin, 2012). The administrator at a small cooperative explains that the cost of exporting through Coocafe reduces the premium gained from the Fair Trade sales. He says, '*We pay $1 per quintal (100 pounds) of coffee exported through Coocafe. It was discussed at the last meeting that this costs is too high*.'

Type 4 cooperatives, if they choose to pursue Fair Trade certification, pursue it independently of Coocafe. These cooperatives are producers of high quality coffee and feel that they do not need Coocafe's assistance to find buyers. Unlike Type 1 and 2 cooperatives, Type 4 cooperatives are able to access financing from banks and therefore do not need the financing provided by Coocafe.

Unlike Coocafe which deals mainly with Fair Trade and serves Type 1 and 2 cooperatives, the consortia Suscof and Cafecoop focus on multiple certifications and Type 2 and 4 cooperatives. The

role of Suscof has evolved over the years from its initial focus on providing training to cooperative managers to access Utz certification. Suscof is now involved mainly in the marketing of both certified and uncertified coffee. Cafecoop focuses on marketing certified and uncertified coffee and not on access to certifications.

Financial Incentives for Cooperatives

Make-up of the Final Sale Price

The final price of green Arabica coffee is made up of three components: the base price, the differential and the certification premium (if any). The division between the differential and the certification premium is somewhat subjective.

The **base price** is the price of Arabica on the New York Stock Exchange (NYSE). The base price of a contract may correlate to the NYSE price at any point between the time of initiation of the contract and the date on which the coffee is delivered, depending on the stipulations of the individual contract. For Fair Trade certified coffee, the seller is guaranteed a minimum base price of US$1.40/pound for washed Arabica coffee. No other certifications have a guaranteed minimum price.

The second component of the final sale price is the **differential**. The differential is based on the country's reputation related to the quality of the coffee and its availability in the market. Some countries, such as Brazil and Honduras, may have negative differentials for certain grades of coffee. In other words the final sale price may be lower than the base price because the differential is subtracted from the base price. According to the cooperative managers interviewed, price differentials for Costa Rican coffee range from $0.10-$0.50/pound depending on coffee grade.

The third component of the final sale price is the **certification premium**. This component is not relevant for conventional coffee. Fair Trade clearly stipulates that a US$0.20/pound social

(certification) premium must be paid by the buyer. The premium for other certifications is not stipulated in their certification guidelines and was found to vary depending on the contract.

Most Costa Rican coffee cooperatives renegotiate contracts with buyers every year. This is in part due to the fluctuation of the market which makes cooperatives reluctant to commit to a price which may be higher the following year and in part to the reluctance of buyers to lock themselves into contracts with small farmer cooperatives whose board of directors and marketing strategies may change from year to year. The few cooperatives that negotiate multi-year contracts are large cooperatives with the financial reserves to withstand market fluctuations and harvest volumes high enough to assure buyers that they will be able to fill future contracts. For those cooperatives with multi-year contracts, fluctuations in the NYSE price are lower.

The payment of certification premiums to cooperatives is quite variable. Beuchelt and Zeller (2013) find that the financial advantage of certified coffee is most apparent when world coffee prices are low. Our study confirms their findings for Fair Trade organic and Utz certifications. For Rainforest Alliance the certification premium seems to be stable. There is evidence that for CAFE Practices certification may augment the fluctuations in the world market price.

Fair Trade, organic and Utz prices vary with market fluctuations

In general, the importance of certifications on the world market varies with the world supply of coffee. When the world price of coffee is low, buyers are more willing to pay certification premiums. A corporate coffee buyer wrote in an email,

> *'When the market is at $2.00 [per pound] or above, quality is THE issue and certifications come second. When we are at a market of $1.16 buyers focus on certifications and NOT primarily on quality. So it's a tough game [for cooperatives] to play, as offer and demand don't tend to agree with one another.'*

Cooperative administrators confirm the difficulty of balancing the supply and demand of certified coffee. The sales manager at Cooperative 6, a Type 4 cooperative, elaborates, *'Certifications are an important strategy in times of low coffee prices…With high prices any coffee is worth a lot of money, [and certifications] lose their interest.'*

Fair Trade, organic and Utz certifications follow this pattern of premiums which fluctuate inversely with the NYSE price. In Table 8 we see average data compiled from the sales contracts of four cooperatives for three harvest years. In harvest year 2012/13, the NYSE price was below the Fair Trade minimum and cooperatives benefitted from both the minimum price and the $0.20/pound certification premium. An administrator at cooperative 1 emphasizes, *"Fair Trade functions perfectly when the NYSE price is below the Fair Trade [minimum] price."*

However, when the NYSE price is above the Fair Trade minimum price, as we see in harvest years 2011/12 and 2013/14, the base price received by the cooperatives is below the NYSE price, making the average final sale price equal to conventional in 2011/12 and $0.08 higher than conventional in 2013/14. In these cases the cooperatives report that buyers will not pay both the full NYSE price and the certification premium. The final sale price was no higher than that of conventional because buyers *'took the Fair Trade premium from the higher NYSE price*,' according to the manager at Cooperative 1.

The manager of Cooperative 2, a Type 4 cooperative, confirms this.

> *'When the New York Stock Exchange price is low (let's say less than $1.40/pound for example), the buyers almost always pay both the quality differential and the $0.20/pound Fair Trade premium. In this case they* always *respect the minimum price of $1.40/pound. The problem is when the NYSE price is at a very high level (let's say, for example $2.00/pound or more). In this case, the problem is the total differential (the sum of the quality differential plus the Fair Trade premium). What they do is lower this total differential so that if the quality differential is $0.35 and the Fair Trade premium is $0.20/pound they will be reluctant to pay*

this total differential of $0.55/pound, but in the end they offer a total differential of $0.40 or $0.45 per pound.'

Therefore, while the contracts include the required $0.20/pound certification premium, it is not reflected in the final sale price.

The resilience that the Fair Trade minimum price offers, however, should not be discounted. Particularly for small cooperatives this economic buffer can be important. The former manager of Cooperative 3, a small Type 1 cooperative and a founding member of Coocafe says '*Fair Trade gave us the possibility to survive when the price of coffee was low*.'

Table 8: Breakdown of final sale price of conventional and Fair Trade coffee paid to cooperatives 2011/12-2013/14.

Harvest Year	Coffee Type	Average Base Price US$/lb	Average Differential US$/lb	Average Certification Premium US$/lb	Average Final Sale Price
2011/12[a]	Fair Trade	1.50	0.30	0.20	2.00
	Conventional	1.70	0.30	0	2.00
2012/13[b]	Fair Trade	1.40	0.25	0.20	1.85
	Conventional	1.13	0.25	0	1.38
2013/14[b]	Fair Trade	2.03	0.20	0.20	2.43
	Conventional	2.10	0.25	0	2.35

Source: Interviews with cooperative administrators.

[a] Data from one cooperative

[b] Average data from three cooperatives.

A Type 4 coop, however, was able to obtain the full NYSE price and the $0.20/pound certification premium in 2013/14, though the selling manager stated that it was a struggle to get the buyer to pay the full amount. *'They didn't want to pay it, but they did.'* This is a large cooperative with an annual production of 85,000 quintals of high-altitude coffee and is in a better position to negotiate with buyers than are smaller cooperatives which produce low-altitude coffee.

The certification premium for organic coffee was found to fluctuate with the market in much the same way as the Fair Trade final sale price. This phenomenon has been noted in previous studies

(Kilian et al., 2006). We compared the certification premium for organic coffee (as compared to the conventional price offered at the same mill) by harvest year and found that it fell as the average export price of Costa Rican coffee increased (See Figure 5). The manager of Cooperative 3 explains how the financial incentives for organic certification vary with the world price of coffee: *"This year [2013/14, high NYSE price] we didn't sell any coffee with organic certification because the premiums were very low… If the premiums are higher next year we will sell again with organic certification."* In this case the farmers continue using organic production practices but receive the price for conventional coffee. Because of the transition period from conventional production to organic certification, cooperatives must maintain the certification every year even if they do not sell any product under the certification. Organic coffee production is normally less profitable than conventional production because of higher labor and input costs which are usually not offset by the premium, (Beuchelt & Zeller, 2011). However, since the premium fluctuates more or less inversely to the NYSE price, organic farmers should experience a more consistent sale price from year to year, offering a buffer from market lows.

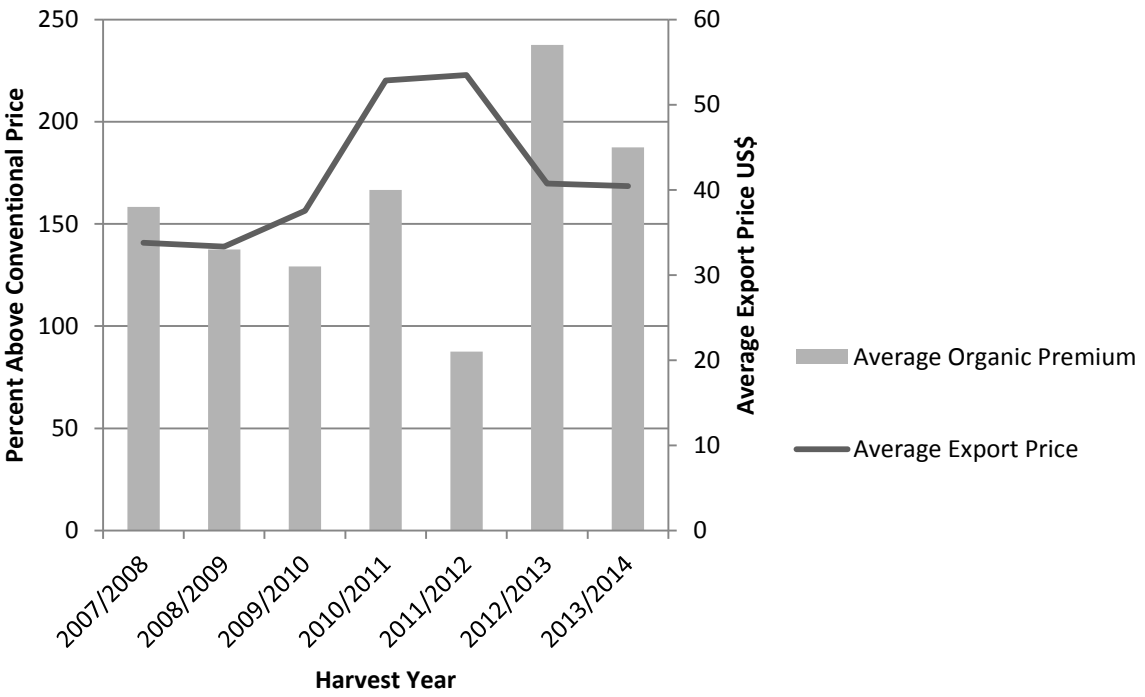

Figure 5 : Average export price of Costa Rican coffee and average organic premium offered by Costa Rican mills. Source: (Icafe, 2008, 2009, 2010, 2011, 2012, 2013b, 2014a, 2014b)

As with organic coffee, cooperatives report that they may not sell Utz certified coffee when the world price is high because both the premium and the demand are lower. A manager at Cooperative 6 explains, '*We didn't sell any coffee in Utz this year [2013/14] but we still hold the certification. We were not gaining anything from the certification and the premium was very low. There were hardly any buyers. [When the NYSE price is high] they can get cheaper coffee from Nicaragua.'*

Confirming previous studies (Kilian, Pratt, Jones, & Villalobos, 2004), we found that the lowest certification premiums were paid for Utz. The five cooperatives that participate in Utz report a small premium between $0.05-$0.10/pound. As we saw with Fair Trade certification, cooperatives may receive a higher price for Utz certified coffee than for conventional coffee, but it is often not as high as expected given the usual differentials received for the class of coffee sold. The manager at Cooperative 2 explains in an email,

> *'Utz certified almost always pay a better price for certified coffee, but almost never pays the total that they should for the quality differential plus the certification premium. There is a*

better price, yes, but they never pay the total of the quality differential for Costa Rican and in the end the certification premium ends up being less than expected.'

Rainforest Alliance premiums remain relatively stable with market fluctuations

Barham and Weber (2012) found that the Rainforest Alliance certification premiums that cooperatives paid to member farmers fluctuated between 2006 and 2008, dropping significantly with a small change in the local market price. Interviews with cooperative administrators in Costa Rica, however, showed evidence of relatively stable certification premiums. A manager at Cooperative 4, a Type 4 cooperative, explains, '*The premium for Rainforest Alliance is $0.10/pound on top of the quality premium [differential] and does not vary with time*." This cooperative, nevertheless, had only two years' experience with Rainforest Alliance certification. The premium paid to cooperatives for Rainforest Alliance certified coffee was found to vary between $0.00 and $0.20/ pound among the five cooperatives which hold the certification. A multiple-year study would be needed to determine the exact effect of market fluctuations on the Rainforest Alliance premium.

CAFE Practices certification premiums may augment market fluctuations

CAFE Practices is a private certification, so it is not surprising that it does not behave in the same way as third-party certifications. Indeed, according to a manager at Starbucks, the company prefers to call CAFE Practices a 'verification' rather than a certification. Starbuck's goal of buying 100% of its coffee from certified sources (mostly from Starbuck's own CAFE Practices program) by the year 2015 (Starbucks Corporation, 2014) means that in times of low supply (high global prices) it may be forced to pay a competitive price to secure coffee with the desired origin, flavor profile and certifications. For this reason we see that cooperatives may receive a slightly higher average price for CAFE Practices certification than for conventional coffee in years of high global prices (2011/12 and 2013/14) and slightly lower prices when there is an oversupply of coffee on the world market (2012/13) (see Table 9). Due to low participation in Nespresso AAA on the part of Costa Rican cooperatives we were unable to assess the price dynamics. However, since AAA, like CAFE Practices,

is a corporate certification which places a high emphasis on quality and origin, there is reason to believe that the two certifications would react in a similar manner. The fluctuation in the price of CAFE Practices, however, is quite small and a larger study would be needed to confirm the long-term price dynamics of corporate sourcing certifications.

Table 9: Breakdown of final sale price of conventional and CAFE Practices coffee paid to cooperatives 2011/12-2013/14.

Harvest Year	Coffee Type	Average Base Price US$/lb	Average Differential US$/lb	Average Certification Premium US$/lb	Average Final Sale Price
2011/12[a]	CAFE Practices	1.70	0.32	0	2.02
	Conventional	1.70	0.30	0	2.00
2012/13[b]	CAFE Practices	1.20	0.22	.03	1.43
	Conventional	1.20	.33	0	1.53
2013/14[c]	CAFE Practices	2.30	.35	0	2.65
	Conventional	2.30	.30	0	2.60

Source: Interviews with cooperative administrators

[a] Average data from two cooperatives.

[b] Average data from three cooperatives.

[c] Data from one cooperative.

When a certification premium amounts to a quality premium

Several authors have argued that what is classified as a certification premium is actually related to the quality of coffee rather than to the manner in which the crop was produced (Kilian et al., 2006; Kilian et al., 2004; Ruben & Zuñiga, 2011). This means that producers must improve both the quality and the sustainability of their production without compensation for the more sustainable practices (Giovannucci, Byers, & Liu, 2008). We found this discrepancy in the cases of CAFE Practices and Rainforest Alliance certification. Cooperatives reported that only coffee with few defects from the peak harvest season can be used to fill contracts for these two certifications. Farmers further reported that they must pay workers more to harvest for Rainforest Alliance certification because the cooperative would accept only 100% ripe coffee cherries for these contracts, which is more time-consuming to harvest. Workers are paid by volume harvested rather than by time worked, so it is not

clear whether or not workers are earning more on an hourly basis due to the painstaking harvesting process.

While quality is an important issue in all certifications, cooperatives did not need to implement any special practices to comply with other certifications, such as Fair Trade or organic. Icafe carefully monitors the quality of export coffee, so the quality standards for conventional coffee are similar to those of certified coffee in Costa Rica. However, an upgrade in quality has been seen in Fair Trade coffee in Nicaragua, where there is less governmental intervention in quality controls (Pirotte, Pleyers, & Poncelet, 2006; Valkila & Nygren, 2010).

Paying Certification Premiums to Members

Although, as we have seen above, cooperatives may receive a financial incentive to pursue certifications, their costs are often substantial and incentives may not be passed on to their members. It is not unusual for cooperatives, particularly in the first years of certification, to retain some or all of the premium (Vandorpe, 2014) to cover the costs of audits, upgrades to the mill or the implementation of a system of internal control.

A cooperative with strong competition from a private mill or one which prioritizes solidarity among the members may choose to distribute any certification premium to all members, rather than just individually certified members. This strategy would allow the cooperative to raise its buying price, attract more sellers and better compete with other mills. However, this strategy dilutes the financial interest of individual certification in the eyes of its members.

Cooperatives which have a more entrepreneurial vision may distribute all or a portion of the premium to certified farmers. This payment is meant as an incentive to offset the costs of implementing new agricultural practices, and acknowledges the notion that 'it is hard to be green when you are in the red' (Vanclay, 2004). The sales manager at Cooperative 6 recognizes the importance of these economic incentives, *'It's very nice to protect the environment, all of this is very*

very important, but the producer needs money.' The average certification premiums paid to certified members are summarized in Table 10.

Table 10: Average certification premium paid to individually-certified members.

Certifications	Number of cooperatives which certify individual members	Average premium paid to certified members (US$/lb) in 2013/14
CAFE Practices	6	$0.08
Rainforest Alliance	5	$0.09
Utz	5	$0.04
Organic	2	N/A

The implementation of sustainable farming practices in order to comply with the rules of certification may represent a significant cost for the producers, and farmers may find changes difficult to maintain if the promised financial incentives are not forthcoming (Smith, 2007). Some of these requirements may include cutting weeds rather than spraying herbicides (which increases labor costs), building a shed to store pesticides, planting shade trees and renovating housing for seasonal workers. The premium paid to farmers for certification may or may not cover the expense of all of these changes. However, farmers may still volunteer to pursue a certification knowing that the costs will not be fully covered because of a desire to improve farm management and recordkeeping or because they think that the changes will result in higher yields. One farmer described the $0.10/pound premium that he receives for Rainforest Alliance certified coffee a 'little gift' from the cooperative acknowledging the effort he had made to implement the certification requirements on his farm. Another smallholder farmer from a neighboring cooperative says that the $0.10/pound premium that he receives for the same certification is essential in order to make the changes needed to comply with the strict environmental requirements of Rainforest Alliance. While he describes himself as having a strong environmental ethic, without the financial incentive provided by the cooperative, he would not be able to make these changes. *'It's not that I don't want to [protect wildlife], it's that I couldn't [without*

the premium].' He repeatedly calls coffee production *'a struggle.' 'Conservation is very important',* he says, *'but the most important is that the kids eat.'*

Two out of four CAFE Practices-certified members at one Type 4 cooperative decided to discontinue their individual certifications after the 2012/13 harvest year when both the world price of coffee and the certification premium paid by the cooperative were very low. Farmers decided that the price incentives were too low to justify the agrochemical restrictions imposed by the certifications, particularly in a year with high disease pressure.

Cooperatives with collective certifications distribute all or a portion of the premium to their members after the cooperative has recuperated its costs. This process is transparent to the members. The manager at Cooperative 1 says, '*We must justify all of these expenditures, colon for colon, to the members.'* A large Type 3 cooperative allocates 100% of the $232,000 earned from the Fair Trade premium to environmental and social projects in the community rather than distributing the premium directly to farmers. The cooperative has decided that, because it has so many members (6000), community-wide programs make a larger impact than a direct payment of less than $40 to each member, a relatively insignificant amount in a country where rural incomes are comparatively high. The members vote on which projects to support at the annual assembly. The farmers may benefit directly from projects such as a watershed revitalization project which provided farmers with shade trees or the provision of disease-resistant coffee seedlings. These projects were funded with the proceeds of the Fair Trade premium in 2013 and 2014, respectively. One Type 4 cooperative pays 100% of the Fair Trade premium to farmers, which amounted to a payment of $228 per member in the 2012/2013 harvest. This amount is insignificant, considering the average rural income in Costa Rica is US$862 per month (Censos, 2012). A direct payment of this amount has less effect on producer livelihoods in Costa Rica than it would in El Salvador, for example, where average rural income is US$361 per month (Melara, 2014).

Although the rules of Fair Trade state that at least $0.05 of the $0.20/pound premium must be allocated for improvements to the harvest, this presents a problem for some Costa Rican cooperatives, which feel that their most important role is to increase the profit of its members. Administrators at Cooperative 1 agree, '*As a business we think it is better that this money goes directly to the producer*.'

All other Fair Trade cooperatives in Costa Rica pay members between 75% and 90% of the $0.20/pound Fair Trade premium with an average premium of $0.13 per pound for all coffee sold as Fair Trade. The remaining 10-25% of the premium from these contracts is used to support programs within the cooperative such as improvements to the mill, educational programs for improving coffee quality, subsidizing the sale of coffee seedlings, scholarships for the sons and daughters of members or programs for women.

In most cases members receive a premium only for the portion of the harvest the cooperative is able to sell as certified. They receive the conventional price for the remainder of their harvest, even though it is standard-compliant. We found two cases of cooperatives paying a premium to farmers even when none was received from buyers. In both cases, Type 4 cooperatives paid certified producers a premium for the entire harvest of certification-compliant coffee, rather than simply for the portion of the harvest the cooperative was able to sell with certification. This is only an option for Type 4 cooperatives with a limited number of certified producers, as smaller cooperatives would not have the financial resources to pay a premium when none was received from the buyers.

Consumers have indicated a willingness to pay a premium for Fair Trade and ecological certifications (Arnot, Boxall, & Cash, 2006; Basu & Hicks, 2008), presumably assuming that the added cost was supporting the implementation of these programs. However, the distribution of this premium along the value chain is not regulated. In an attempt to increase the amount of certified production, concessions have been made in the strictness of the standards. Price provisions to producers are most frequently the first standards to be relaxed (Daviron & Vagneron, 2011). Lack of transparency in

the price distribution favors buyers in price negotiations (Giovannucci et al., 2008). Willingness to pay on the part of the consumer coupled with relaxed standards on price premiums to producers creates the opportunity for middlemen such as exporters and roasters to charge higher prices without passing the profit on to producers (Vagneron & Roquigny, 2011; Valkila, Haaparanta, & Niemi, 2010).

Even if cooperatives do not directly pass premiums on to their members, the members may still benefit. Cooperative 19, a large Type 4 cooperative uses the premium from Rainforest Alliance and Women's Harvest and a portion (25%) of the premium from Fair Trade to fund its sustainability program and programs for women. The sustainability program includes environmental education programs for children, health fairs, a recycling program and programs for immigrants. Programs for women focus on women's empowerment and financial independence.

Certified farmers may also receive in-kind contributions to help them comply with certification standards, such as free shade tree seedlings, personal protective equipment for pesticide application or specialized training in lieu of financial incentives.

Studies which document the lack of financial incentive for member farmers overlook the benefit that certifications have on subsidizing cooperatives. In the more remote coffee growing regions, cooperatives may be the only buyer of coffee. If cooperatives go out of business farmers would be unable to sell their harvest. These remote cooperatives are often important contributors to the local economy, as an administrator at Cooperative 1 explains, '*Eighty-five percent of the local economy passes through the cooperative*.'

Compliance with certification standards can improve farm management. Recordkeeping and cost analysis is limited at both the cooperative and the farm level (Ton et al., 2007). The agronomist at Cooperative 1 says, '*There is no culture of recordkeeping among the farmers. Not just here, in all of Latin America.*' Certifications have helped change this, particularly at the cooperative level. There is anecdotal evidence that improved recordkeeping has improved the profitability of farms, but without pre-certification records this is impossible to quantify.

Conclusion

Financial incentives encourage cooperatives and, in some circumstances, farmers, to pursue certifications. Nevertheless, these incentives are often variable. Many times certification premiums amount to quality premiums. If cooperatives receive a certification premium, buyers may pay a lower quality premium, thereby negating any financial gains from certifications. Multiple certifications may lower auditing and implementation costs, but cooperatives rarely receive the full premium for multiply-certified coffee.

Price incentives vary depending on the world price of coffee, the quality of coffee produced and the certification scheme. There are no clear and consistent financial incentives to pursue certification. Financial incentives for certifications such as Fair Trade, organic and Utz may diminish or disappear entirely when the world price of coffee is high. Our study found Rainforest Alliance premiums to be more consistent, but previous studies have observed fluctuation with the market. CAFE Practices fluctuate with the world price of coffee and may even augment market highs and lows. The demand for certified coffee also fluctuates with the world price.

Cooperatives are able to satisfy market demand by certifying only a small portion of their members, reducing the farm-level impact because the cooperatives can select the most compliant farms. Because of an oversupply of certified coffee on the world market, consumer demand would have to increase considerably, prompting the certification of more farms, to have a significant positive impact at the farm level.

Collective certifications of all members of a cooperative have the potential to induce the greatest change at the farm level, whereas the certification of individual farms rewards mainly progressive farmers. Low consumer demand, high auditing and certification costs and weak financial incentives encourage cooperative to certify individual members, undermining the potential for upgrades to the sustainability of all members' farms.

Strict governmental regulation of the coffee industry facilitates compliance with certifications. However, high rural incomes such as those in Costa Rica mean that financial incentives are often insignificant. Cooperatives with many members and low percentages of certified coffee sales often choose to use certification premiums for programs which benefit the community, rather than a direct payment to the members.

Certifications improve recordkeeping and management in the cooperative. Cooperatives, whether or not they offer direct financial incentives to members, offer many in-kind and indirect benefits related to certification and account for the expenditures of the premium in a transparent manner. The decision about the payment of direct financial incentives to members is based on competition from other mills, the financial situation of the cooperative and ideals of equality within the cooperative.

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[1]Certifications in this article refer to any program in which farmers or groups of farmers comply with a defined set of production practices in return for verified distinction in the marketplace. Some certifiers (Starbucks, Women's Harvest, 4C) prefer to call their programs verifications rather than certifications, however for the purposes of this article both types of programs are considered together.

[2]Organic certification in Costa Rica is more popular among associations, rather than cooperatives. Several Costa Rican associations also participate in other certifications such as Fair Trade or CAFE Practices.

Chapter 5: Voluntary Coffee Certifications Influence how Cooperatives Provide Advisory Services to Smallholder Farmers in Costa Rica

Based on a manuscript by

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Abstract

The previous chapter presented general data about how cooperatives manage certifications and incentivize farmers. Because of the structure of the certified coffee industry, incentives are often weak and thus farm level changes are likely to be small. However, in addition to financial incentives, cooperatives offer many advisory services to their members which are related to certifications. The purpose of this article is to explore possible reasons why impact studies may conclude that farm level changes are small, even if farmers are complying with certification standards. It also explores other non-financial effects of certifications at the cooperative level.

Certifications oblige cooperatives to offer new services to support farmers. Cooperatives form collaborations with new stakeholders or reconfigure existing collaborations to provide extension services to their members. These services have helped to shape farmers' attitudes about sustainable farming practices, though farm-level changes may be small. The main change at the cooperative level is the development of a new discourse on sustainability. Advisory activities addressing certification issues are directly linked with practices such as maintaining a farm record book to better manage farm resources or wearing a mask when applying pesticides. The increase in the number of shade trees on the farm is linked to cooperative services.

The results are useful to improve the advisory services provided by cooperatives by better identifying the key issues to be addressed to fulfill the certifications' requirements.

We demonstrate that certifications change the intensity and scope of extension services and oblige cooperatives to engage with a more diverse network of stakeholders.

Résumé

Le chapitre précédent a présenté des données générales sur la façon dont les coopératives gèrent les certifications et incitent les agriculteurs. En raison de la structure de le secteur du café certifié, les incitations sont souvent faibles, et par conséquents les changements faibles au niveau des

exploitations. Cependant, en plus des incitations financières, les coopératives offrent de nombreux conseils agricoles services consultatifs à leurs membres en lien avec la certification. Le but de cet article est d'explorer pourquoi les études d'impact peuvent conclure que les changements au niveau des exploitations sont faibles, même si les agriculteurs sont conforment aux normes de la certification. Il explore également d'autres effets non financiers de la certification au niveau de la coopérative.

La certification oblige les coopératives à offrir de nouveaux services visant à soutenir les agriculteurs. Ces coopératives mettent en place des collaborations avec de nouvelles parties prenantes, ou reconfigurent des collaborations existantes, dans le but de fournir des conseils agricoles à leurs membres. Ces services ont contribué à façonner l'attitude des agriculteurs vis-à-vis des pratiques agricoles durables, bien que les changements au niveau de l'exploitation agricole puissent être faibles. Le principal changement au niveau de la coopérative est le développement d'un nouveau discours sur la durabilité. Les activités de conseil traitant la certification sont directement liées à des pratiques telles que le maintien d'un registre agricole afin de mieux gérer les ressources de la ferme ou le port d'un masque lors de l'application des pesticides. L'augmentation du nombre d'arbres d'ombrage sur la ferme est liée aux services de la coopérative.

Ces résultats sont utiles pour améliorer le conseil agricole fournis par les coopératives, en identifiant mieux les questions clés à aborder afin de répondre aux exigences des certifications.

Nous démontrons que les certifications changent l'intensité et la portée du conseil agricole, et obligent les coopératives à collaborer avec un réseau plus diversifié de parties prenantes.

Resumen

El capítulo anterior presentó datos generales acerca de cómo las cooperativas logran las certificaciones e incentivar a los agricultores. Debido a la estructura actual de la industria del café certificado, los incentivos son a menudo débiles y por lo tanto los cambios de nivel de cafetal son propensos a ser mínimos. Sin embargo, además de los incentivos financieros, las cooperativas

ofrecen a sus miembros muchos servicios de asesoramiento que están relacionados con las certificaciones. El propósito de este artículo es explorar las posibles razones por las que los estudios de impacto pueden concluir que los cambios del nivel de las fincas son pequeños, incluso si los agricultores están cumpliendo con los estándares de certificación. También explora otros efectos no financieros de las certificaciones al nivel de la cooperativa.

Las certificaciones obligan a cooperativas para ofrecer nuevos servicios de apoyo a los agricultores. Las cooperativas forman colaboraciones con nuevas partes interesadas o reconfigura las colaboraciones existentes para proporcionar servicios de extensión a sus miembros. Estos servicios han ayudado a dar forma a las actitudes de los agricultores sobre las prácticas agrícolas sostenibles, a pesar que los cambios a nivel de los cafetales puedan ser pequeños. El principal cambio en el nivel de cooperativa es el desarrollo de un nuevo discurso sobre la sostenibilidad. Las actividades de asesoramiento que abordan las cuestiones de certificación están directamente vinculadas con las prácticas tales como el mantenimiento de un libro de registro de explotación para gestionar mejor los recursos agrícolas o usar una máscara durante la aplicación de pesticidas. El aumento en el número de árboles de sombra en la granja está vinculado a los servicios de la cooperativa.

Los resultados son útiles para mejorar los servicios de asesoramiento prestados por las cooperativas para identificar mejor las cuestiones clave que deben revisarse para cumplir con los requisitos de las certificaciones.

Se demuestra que las certificaciones cambian la intensidad y el alcance de los servicios de extensión y obligan a las cooperativas de comprometerse con una red más amplia de las partes interesadas.

Introduction

Voluntary certification schemes which verify sustainable production practices often require farmers to adapt their farming practices. Advisory services are essential to help farmers gain new knowledge, understand the requirements of certification standards, to comply with their demands (Hejnowicz, Rudd, & White, 2016) and help farmers transition to more sustainable practices (Ingram, 2008). A simple transfer of technology is not adequate to achieve more sustainable production; advisors and farmers must work together to construct knowledge (Klerkx & Jansen, 2010). Education in sustainable practices is also important to an organization, as it embeds social and environmental responsibility into the organization's values (Klerkx, Villalobos, & Engler, 2012). Farmers' organizations do not only create access to inputs and credit to their members, but are also important providers of advisory services (J. F. Le Coq, Faure, & Saenz, 2012). These services are vital for small farmers' access to and compliance with private certifications, as the standards frequently change and can be difficult to navigate (Elder et al., 2013; Poulton, Dorward, & Kydd, 2010).

Intermediary organizations that link various actors can expand the reach and impact of advisory services (Klerkx & Gildemacher, 2012). Howells (2006) defines an intermediary as 'an organization or body that acts as an agent or broker in any aspect of the innovation process between two or more parties.' Farmers' organizations play such an intermediary role (J. F. Le Coq et al., 2012; Yang, Klerkx, & Leeuwis, 2014). Farmers' organizations engage outside stakeholders with the expectation of improving farmers' access to financial services, farm inputs and technological services (Gouët & Van Paassen, 2012). Farmers' organizations articulate their members' needs for technology, knowledge, funding and other services; directly provide services or compose networks to provide these services; and facilitate the interaction between other service providers and their members. Inter-organizational collaborations can facilitate access to new resources or markets and enhance innovation processes. By acquiring new knowledge and resources from these collaborations, farmers' organizations may decide to provide new services to their members.

The development of voluntary certifications requires the collaboration of multiple stakeholders (Alvarez, Pilbeam, & Wilding, 2010; Bitzer et al., 2008), although the exact role of different types of organizations is not clear. An institutional environment which includes environmental NGOs and consumer organizations may facilitate the implementation of voluntary standards (Klerkx et al., 2012). Previous research has paid little attention to the collaborations of farmers' organizations with other stakeholders in efforts to access certifications, the effect of these collaborations on the content and intensity of advisory services to farmers, and the effects of these new advisory services on farming practices. Our research aims to fill this gap.

The objectives of this study are to i) examine the influence of coffee certifications on the advisory services which farmers' organizations provide to their members and ii) the effect of these services on farming practices and on farmers' perceptions of environmental sustainability. We look specifically at changes in the engagement with outside stakeholders and its influence on training and other services. Our research is based on case studies of first and second-level coffee cooperatives, which are the types of farmers' organizations most involved in certifications in Costa Rica.

Costa Rica and Voluntary Coffee Certifications

Costa Rica presents an interesting setting to study the dynamics of voluntary coffee certifications and the role of small-farmer cooperatives. First, 92% of farmers cultivate less than five hectares of land (Icafe, 2013b) and 41% of the 2013/14 harvest was processed by small-farmer cooperatives, making this type of farmers' organization an important part of the national coffee sector (Icafe, 2014).

Second, the Costa Rican coffee sector participates in multiple voluntary coffee certifications. In 2012, 32% of the national harvest was compliant with one or more certification standards (Potts et al., 2014). Cooperatives are essential for small farmers to access these certifications (Faure, Le Coq, et al., 2012). Of Costa Rica's 22 cooperatives, 82% have at least one certification and 55% have multiple certifications. The most popular certifications among Costa Rica's cooperatives are Fair Trade (15

cooperatives participating), Starbucks' CAFE Practices (8 cooperatives), Rainforest Alliance (5 cooperatives), and Utz (5 cooperatives) (Snider, Faure, Gutiérrez, & Sibelet, Submitted for Publication). All certifications require farm-level practices such as recordkeeping or the reduction of agrochemicals (Raynolds et al., 2007). There are differences among the standards of the different certifications. For example, Fair Trade requires that members are organized democratically and receive training in safe handling of pesticides and soil and water management (Fairtrade International, 2014). In addition to sustainable agricultural practices, CAFE Practices requires high quality coffee and health and safety training for farm workers (Starbucks Coffee Company, 2012). Rainforest Alliance focuses on biodiversity and workers' welfare (Rainforest Alliance & SalvaNatura, 2010) while Utz focuses on farm management and traceability (Utz Certified, 2015). Costa Rican cooperatives select and manage certifications in different ways, depending on their ideologies, their commercial strategies, the quality of coffee they produce, market demand and price for certified coffee (Snider et al., Submitted for Publication). Some cooperatives certify all members of the cooperative (collective certification) to promote equality and good management practices among all members (Fair Trade allows only collective certifications). Responding to limited market demand, other cooperatives use individual certifications by involving a few farmers who already comply with the majority of the standards. These farmers may receive a small premium from the cooperative to incentivize their participation and acknowledge their efforts (Snider et al., Submitted for Publication). Some cooperatives may join a second-level cooperative, or consortium, to receive support in accessing certifications. One such consortium is Coocafe, a group of nine Fair Trade cooperatives which has been important to accessing Fair Trade in Costa Rica (Ronchi, 2002).

Coffee grown at higher elevations is generally of a higher quality and commands a higher market price (Bosselmann, 2012). In Costa Rica, cooperatives at lower elevations, such as those in Guanacaste, participate mainly in Fair Trade. Cooperatives at higher elevations, such as those in the West and Central Valleys and in Tarrazú, mainly participate in certification schemes managed by

private companies, namely Starbuck's CAFE Practices, and in multi-stakeholder and NGO-initiated certification schemes such as Utz and Rainforest Alliance (Snider et al., Submitted for Publication).

Conceptual Framework

Relevant advisory services are considered vital to implement certifications and change agricultural practices (Elder et al., 2013; Ruben & Zuñiga, 2011) but the cost of these new services must be considered. Advice may be provided based on individual support or collective training and using different approaches ranging from a top-down approach of technicians training farmers to adopt external proposals, to a bottom-up approach that aims at strengthening the autonomous decision-making process of farmers (Faure, Desjeux, & Gasselin, 2012). However, changing agricultural practices to achieve a more sustainable farming system is more than just a technical process; it is also a socio-cultural process and requires farmers to construct new knowledge. Facilitative advisory relationships are more effective in constructing knowledge than top-down methods, however their use is limited.

Figure 6 summarizes the interaction between cooperatives, other stakeholders and farmers in relation to advisory services. Certification standards are a normative driver of change at both the cooperative and the farm level (Klerkx et al., 2012). Cooperatives exist within and interact with the institutional environment which influences the cooperatives' perceptions of sustainability and their design and implementation of new services for their members. Stakeholders such as NGOs, public entities or private companies provide services that may directly affect farmers' perceptions and their farming practices, but changes at the farm level may also be influenced by other external coercive drivers, such as laws, governmental initiatives, actions of other actors not linked to certifications, etc.. The farmers' organization itself provides its own intrinsic driver to improve sustainability practices and advisory services. The cooperative principles which guide farmers' organizations articulate their duty to provide education, community development and corporate responsibility (Carrasco, 2007).

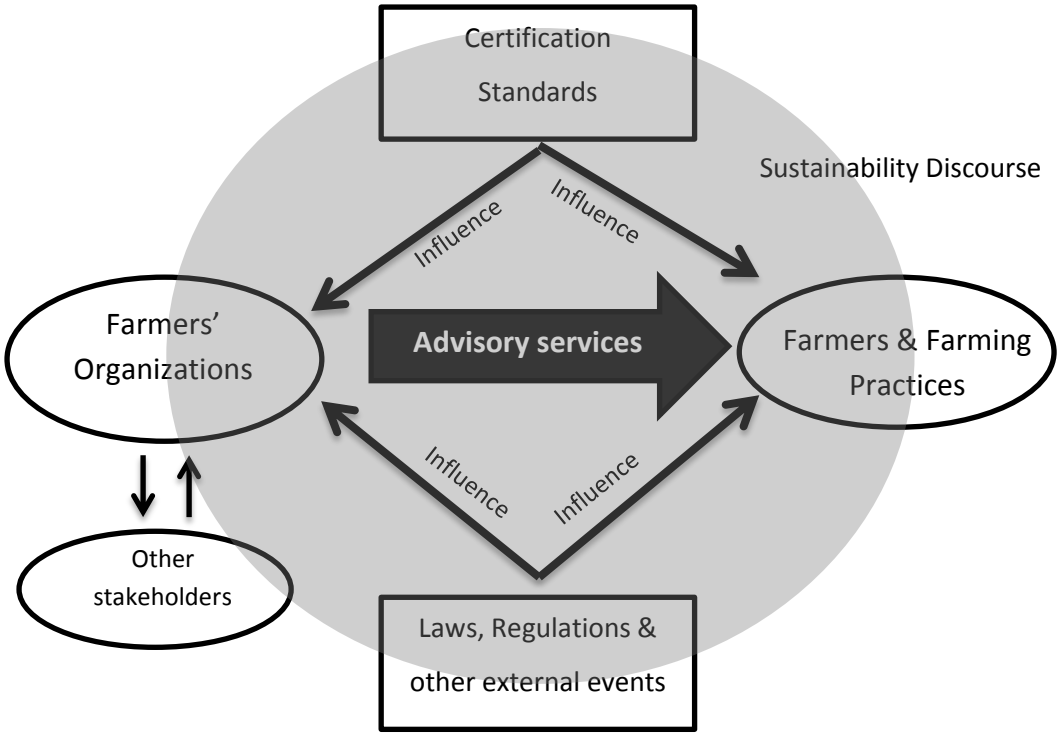

Figure 6 Conceptual diagram of the relationships between farmers' organizations and the change in farming practices.

Considering this conceptual framework, our research questions are how do certifications influence the manner in which cooperatives provide advisory services to their members and how do these advisory services influence farming practices?

Materials and Methods

To achieve our research objectives we began with a general survey of coffee cooperatives in Costa Rica to better understand the state of voluntary certifications among the cooperatives. We interviewed administrators from 20 of Costa Rica's 22 coffee cooperatives to collect data on the size of the cooperatives; the size and quality of the harvest; and their participation in certifications, including their management strategy (collective or individual certification of members). This data was used to construct a typology of Costa Rican coffee cooperatives based on their participation in certifications; number of certifications held and type of certification. When categorized in this way,

patterns emerge regarding the size of the cooperative, the quality of coffee produced and the motivations for pursuing certification. Table 11 outlines the four distinct Types.

From this typology, four cooperatives were chosen for their diversity of Type and geographical location. We used a multiple-case study design in which each cooperative is studied as a separate case within the same study. The case study design was chosen for its usefulness in answering 'how' questions (Yin, 2009). The case study method allowed us to explore the complex relationships of cooperatives and outside stakeholders. We used multiple case studies embedded in the context of cooperatives which participate in coffee certifications in Costa Rica because the evidence from multiple-case designs is more compelling and regarded as more robust than single-case designs (Yin, 2009). Four case studies were chosen to maximize the data collected while accommodating the time constraints of the researchers.

Table 11 : A typology of Costa Rican coffee cooperatives.

Characteristics	**Type 1** Small/Marginal Coocafe Dependent	**Type 2** Medium dependence on Fair Trade	**Type 3** Low to no participation in certifications	**Type 4** Diversified Certifications
Size	Small	Small/medium	Small to large	Medium/large
Elevation	Low to mid	Mid to high	Mid to High	High
Certifications	Fair Trade or FT/Organic	Fair Trade, may try other certifications, but they often find they cannot maintain them because of lack of market demand or personnel	One or no certifications.	Three or more certifications
Amount of certified coffee sold	Financially-dependent on Coocafe. Those currently exporting sell at least 30% in Fair Trade.	Medium dependence on certification. Sell 15-60% of the harvest in Fair Trade.	<5% of harvest sold with certification	< 30% of total harvest sold in any one certification.
Reasons to certify	Premium	Financial but also to provide more services to members.	Little interest in certifications.	Request of important buyers and environmental reasons.
Number of cooperatives	6	4	6	6

Since the research objective was to analyze how participation in certifications influence the advisory services of coffee cooperatives, Type 3 cooperatives, which do not participate intensively in certifications, were not chosen for case studies. The case studies consisted of semi-structured interviews (N. Sibelet et al., 2013) with cooperative administrators to understand the history of certifications in the cooperatives, the history of the services provided to the members and the collaborations that the cooperatives formed in order to provide these services. We also reviewed the cooperatives' training records when available, and observed events organized by the cooperatives, including group training, farm visits and annual assemblies. In addition, we interviewed five key stakeholders including NGOs, private companies and governmental organizations involved in providing advisory services to farmers. The case studies and interviews are summarized in Table 12.

Table 12 Summary of case study cooperatives, certifications and interviews.

Cooperative	Type	Elevation	Certifications and management strategy: collective or individual (i)	Year of first certification	Approximate Number of Members	Member Interviews	Administrator interviews
Coop 1	Type 1	Low	Fair Trade (c)	1989	170	0	1 general manager
Coop 2	Type 2	High	Fair Trade (c), CAFE Practices (c)	1999	640	25	1 general manager, 1 agronomist
Coop 3	Type 4	High	CAFE Practices (i), Rainforest Alliance (i), Utz (i),	1999	2100	0	1 sales manager, 4 agronomists
Coop 4	Type 4	High	CAFE Practices (c), Rainforest Alliance (i), Fair Trade (c)	2003	2900	26	1 program manager, 1 sales manager, 1 manager of technical department
	Total					51	11

A timeline from before certification until the present was created from the case study data. The lack of cooperative training records made quantifiable data analysis difficult in some cases. We therefore triangulate incomplete data with quotes from interviews.

In order to address the second part of our objective, to determine the effect of the changes of services on the farming practices of members, we conducted semi-structured interviews (N. Sibelet et al., 2013) with cooperative members, resulting in interviews with 51 farmers from Cooperatives 2

and 4 using snowball sampling. Interview questions can be found in Appendix C. All members of the two cooperatives are certified in Fair Trade and CAFE Practices. Six of these farmers are also individually-certified by Rainforest Alliance through Cooperative 4. Farmers were asked about the evolution of their perceptions about environmental issues, changes to farming practices (including the planting of shade trees and live barriers, and the use of personal protective equipment, farm record books and inputs), use of the cooperative's advisory services and other external events (new regulations, other environmental initiatives) which were influential in the evolution of their farming practices. To complement and triangulate information from the surveys we conducted two focus groups with members of Cooperative 2.

Results and Discussion

Changes at the cooperative level

Interviews with the cooperative administrators emphasize the importance of changing the perceptions of and building capacity in the cooperative staff before the cooperatives could induce change at the farm level. The agronomist at Cooperative 2 explains, '*First the cooperatives changed, then the farms*.' This capacity building is the most important for obtaining the first certification. Once the systems of internal control and traceability are implemented and initial changes have been made at both the cooperative and the farm levels, the following certifications are easier to obtain. The same agronomist goes on to clarify some of the changes in procedures, '*100 percent traceability is important for Fair Trade certification. We have to document what training and talks we have hosted and who attended, make sure that all paperwork is in order and document farming practices.*

Cooperative administrators agree that certifications oblige them to change the advisory services they offer to their members, requiring more diversified topics than previously offered. The agronomist from Cooperative 2 elaborates,

> *'When the certifications came into play, there was a drastic change in behavior, because we had to consider other factors in extension and training which were absent in the former*

> *system …Certifications forced us to diversify our trainings. Before certifications …we talked more about productivity, about how to maintain oneself as a producer. Now that the certifications are incorporated, the focus is more global.'*

He specifically mentions a new requirement from Fair Trade to offer training on climate change adaptation and Fair Trade and CAFÉ Practice's requirements of paying farm labors a minimum wage.

We can compare this to a small cooperative in the Central Valley which does not hold any certifications and does not address environmental or social concerns in its group training. According to the manager, their training topics have not changed significantly in the past ten years, '*We offer one training per month on coffee maintenance, fumigation or something similar. The National Coffee Institute (Icafe) provides these trainings because we do not have an agronomist*.'

These new advisory services put a strain on the technical department of cooperatives. Because of this strain on human resources and because the new topics required by certification are frequently out of the expertise of the cooperative staff, cooperatives form alliances with new stakeholders to learn or to obtain services for their members. Consortia such as Coocafe or Sustainable Coffee Project (Suscof) could be seen as alliances among cooperatives to assist staff to comply with the certifications' requirements. Coocafe, for example, continues to build capacity in cooperative staff to help them keep abreast of changing standards, even in cooperatives which have been certified for over 20 years.

Collaborations with NGOs are most frequently used to initiate the certification process or to provide more specialized training after the cooperative has met the basic requirements of certification. Public entities are most often used for providing group classroom-style training to members. Collaborations with private actors, such as chemical companies are sometimes reconfigured in order to comply with certification. The agronomist from Cooperative 2 clarifies, '[*The private chemical companies] know*

which certifications we have and which pesticides are prohibited and they adapt their talks accordingly.' The services provided by different stakeholders are summarized in Table 13.

These new collaborations were brought about by the need to meet certification standards, modify staff and members' perceptions about sustainable farming practices, improve the traceability of product and modify services. However it takes time to adapt advisory services to the needs of certified members, as shown in Table 14.

Table 13 Cooperatives' collaboration with other institutions and the types of services provided to cooperatives and to farmers. FT= Fair Trade, RA= Rainforest Alliance CP= CAFE Practices

Type of Institution / Services	NGO	Private	Public	Consortia
Building Producer Capacity	Earthwatch offered training for CP, funded by Starbucks	Chemical companies provide training and recommend pesticides in compliance with certification regulations. Starbucks' Farmer Support Center offers advisory services.	National Learning Institute (INA), Icafe, MAG, Tropical Agricultural Research and Higher Education Center (CATIE)-International Center for Research in Agricultural Development (CIRAD), Department of Labor, National Institute of Innovation and Technology Transfer in Agriculture (INTA).	Coocafe offers group trainings to producers for FT.
Building Cooperative Capacity	Friedrich Ebert Foundation founded Agro Economic Consultancy (CAE) to build capacity in cooperatives to access FT			Coocafe offers capacity building to cooperative staff. Suscof trained cooperative staff in sustainable coffee production for Utz.
Provision of goods: shade trees, recycling, soil testing	Clean our fields foundation provides recycling of pesticide containers for RA	Costa Rican Institute of Electricity (ICE) provided seedling shade trees for reforestation for CP and FT.	MAG offers free soil testing.	Coocafe offers mock-audits for cooperativess/cooperative members for FT. Provided shade trees for reforestation project for FT.
Financial Support		Starbucks funded development of soil analysis software and certified farmer training for CP.	National Institute for Cooperative Support (INFOCOOP) provides financing to cooperatives.	Coocafe offers financial support to member coops for FT.

Table 14 Summary of time-line series of four case study cooperatives from before certifications to ten years after certification. FT= Fair Trade, RA= Rainforest Alliance, CP= CAFE Practices.

Before certification	Around the time of certification (+/- 1 year)	1-5 years after certification	6-10 years after certification
Cooperatives offer services to members including credit for inputs, group training on productivity and disease management, site visits, soil analysis. Occasionally collaborate with Icafe and/or MAG.	First certification is FT for Type 1 and 2 coops or an individual certification of the cooperative farm or select member farms in Utz or RA in Type 4. Cooperative may join a consortium to access certifications (3/4 case study cooperatives). Cooperative makes cooperative-level changes (with the help of the consortium) such as upgrades to the mill (FT) and to the system of internal control/traceability for all certifications. Consortia offer training to cooperative administrators (ex. Sustainable production practices (Utz), internal control and traceability systems (Utz, FT)) and occasionally to members (ex. audit preparation for FT, sustainable production practices (FT)).	Cooperative stops selling prohibited pesticides in supply store and exerts tighter control on members regarding pesticides. It may take several years to comply. Cooperative assists/encourages members to build pesticide storage shed and provides free signage to members. Cooperative intensifies training to include topics required by certification (soil and water protection, pesticide management and safety for all certs). Continue to use MAG and Icafe to offer trainings, but topics are more diverse (ex. soil management, use of recordbook). Collaborations with new governmental organizations are formed to provide training on new topics such as occupational health and safety. Extra site visits and paperwork are usually handled by existing staff. Cooperative may pursue second certification.	Cooperatives continue to adapt to changes in certification regulations including new training requirements, newly prohibited pesticides. New collaborations are formed with NGOs and universities to provide more specialized training (ex. soil analysis software for CP, adaptation to climate change or FT) and services (ex. recycling of pesticide containers for RA and provision of shade trees for RA or CP).

Cooperatives offer more services to their members to help them comply with certification. Most of these services are educational, but may also be in the form of provision of materials and inputs, such as shade trees, compost, signage for pesticide storage sheds or personal protective equipment, while yet others provide tangible solutions to challenges, such as recycling services. Cooperatives who certify individual members mainly target their services and education to certified members. A cooperative agronomist justifies the cooperative's decision to focus their limited resources on certified producers until more supplies become available, '*We provide shade trees to [Rainforest Alliance and CAFE Practices] certified producers to help them increase their shade…Right now we only provide them to certified producers, but we would like to provide them to all members [eventually].'* These changes in advisory services are summarized in Table 15.

Table 15 Advisory services provided by the cooperatives, before and after certifications

	Before Certifications	After certifications
Trainers	Cooperative agronomist, private chemical company representatives, MAG, Icafe	Cooperative agronomists, private chemical company representatives, MAG, Icafe. Sporadic engagement with other governmental organizations and NGOs, stronger engagements with higher education. As capacity is built in cooperative staff outside organizations may be used less.
Group Trainings and field days	Focused on productivity, classroom style. Mostly equal access for all members.	Additional topics beginning with protection of water, reduction of agrochemicals, signage for pesticide storage sheds, personal protective equipment, soil protection, compost, recordkeeping , shade trees (in some cases) and more recently climate change. May focus on individually-certified members. Mostly classroom style. Additional field days for certified members.
Individual Farm visits	Provided by cooperative agronomist or technician. Focus on productivity, equal but infrequent access for all members.	Provided by cooperative agronomist or technician. Focus on productivity, compliance with certification standards and book keeping. Focus on certified members with more frequent visits per farm.

While advisory services are more intensive and the subjects more diverse because of certifications, a review of the cooperative training records reveals that group trainings remain focused on lecture-type talks or top-down demonstrations. However, these trainings seem to be effecting in convincing members to implement certain management practices. Based on interviews with farmers we found those who attended more training events were more likely to wear a mask when applying pesticides (see Figure 7). An individually-certified farmer who regularly attends trainings sponsored by the cooperative says *'After the training I realized I should use it.'* Farmers who attend trainings are also more likely to keep a farm record book to record earnings, expenses and the application of inputs than are farmers who never attend group training events. A group training event convinced one farmer of the benefit of maintaining a record book, *'I'm no longer certified but I still use the record book. It is a good practice.'*

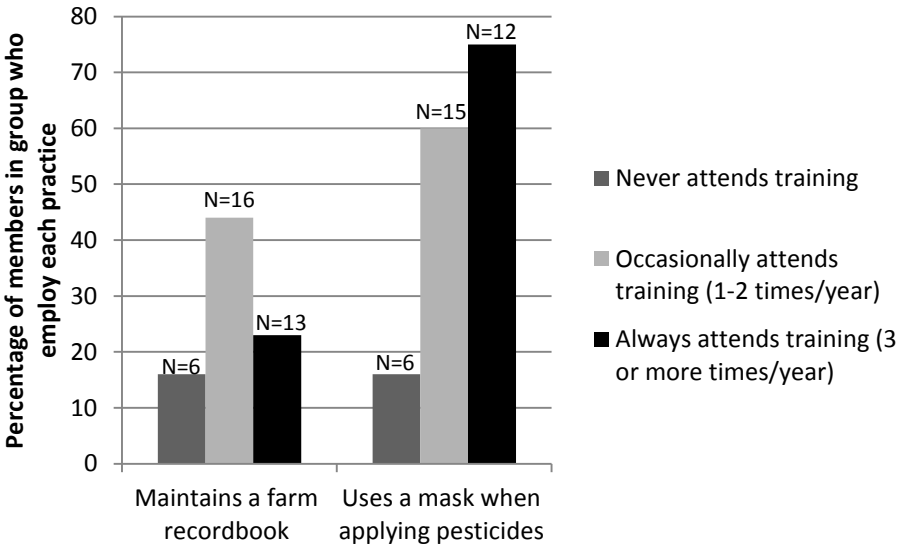

Figure 7: Management practices in regard to participation in group trainings

Since pre-certification training records are not available for any of the cooperatives, we cannot assess if the frequency of field day-type trainings (in which members visit the farm of another member) have increased. Nevertheless, field days are infrequent. Only cooperatives 3 and 4 offered field days to members in the past three years. According to training records, these field days involved 14% and 9% of the cooperatives' members, respectively. Icafe collaborated in the field days for both cooperatives, and various agrochemical companies made presentations about their products. Cooperative 4 offers field days annually, with one or two per year open to all members and one event specifically for Rainforest Alliance-certified members. They may use the event for individually-certified members as an opportunity to distribute free shade trees or cuttings of plants to be used for live vegetative barriers as a means to help certified members comply with certification.

Farmer-to-farmer trainings are not formally organized by any of the cooperatives, despite their proven effectiveness in Mexico in spreading knowledge about certified organic practices and in taking some pressure off of technical staff (Bray, Sanchez, & Murphy, 2002). Because changing agricultural practices is a social as well as a technical process (Vanclay, 2004), advisory activities should allow farmers to experiment with new practices, discuss and exchange experiences with other farmers to help them construct new paradigms about what constitutes a sustainable practice.

Changes in farming practices

There is a consensus among the administrators of the cooperative administration that the environmental and sustainability training brought about by certifications has caused real changes in the farmers' perceptions about how to manage their farms. A cooperative agronomist explained,

> '*There is no doubt that the perceptions of farmers have changed with certifications [in regard to] conservation of soil and water, the use of [personal protective] equipment, the manual control of pests and reduction of chemicals... They no longer think that the farm needs to be 100% free of pests. A certain threshold is acceptable*.'

The farmers themselves confirm that their opinions and awareness have changed because of the changing discourse in the cooperative. A member explained that the Fair Trade standard, which requires that all pesticides be locked in a dedicated shed, helped raise awareness about safe pesticide handling practices. *'Before we kept our pesticides in the kitchen. Now we have a shed.'*

Changing paradigms, however, takes time. Agronomists agree that there is a period of transition as farmers unlearn old practices and change their perceptions. Agrochemical use was the most frequently-cited practice in this regard. Cooperative agronomists explain in interviews:

> '*At first the farmers went to San José to get the [prohibited] pesticides. Now they realize they can manage without them.*'

Though prohibitions of pesticides have drastically reduced the use of some of the most dangerous products, farmers who attend more training sessions are not more likely to use sustainable farming practices that compete with productivity. Members who attend more training sessions are likely to apply fungicides and fertilizers more frequently (See Figure 8). The rise in fungicides may be a result of both the epidemic of coffee rust (*Hemileia vastatrix*) at the time of the survey and the prohibition of some of the most effective but also most dangerous fungicides. Fungicides with lower toxicity may require more frequent applications. The application of fungicides is a major predictor of yield and harvest quality in this region (Castro-Tanzi, Dietsch, Urena, Vindas, & Chandler, 2012). This puts

certified cooperatives in a difficult position, since certification standards promote a reduction in pesticide use, yet high quality is a prerequisite for participating in certified markets (Kilian et al., 2004), particularly in CAFE Practices. A cooperative agronomist explains the dilemma, '*More agrochemicals are needed to raise the quality of the coffee. However, the certifications require a reduction in agrochemicals, so the producer is left wondering how to produce a higher quality crop and also protect the environment*.'

Though certifications encourage a reduction in the dependence on agrochemicals, the wording in the standards is not explicit about the frequency of applications. For example from the CAFE Practices standards '*Pesticides are only applied as a last resort (after cultural and physical controls have failed*' (Starbucks Coffee Company, 2012).

Members who frequently attend training make fewer herbicide applications on their coffee plantation (See Figure 8).

Though this could be seen as an increase in the environmental consciousness of the producers, it may be an attempt at raising productivity. Of the farmers who reduced the number of herbicide applications, 42% of them reported doing so because of a decrease in soil fertility, as compared to 17% who did so for purely environmental reasons. Only 8% reported reducing herbicides applications in order to comply with a certification standard (specifically Rainforest Alliance).

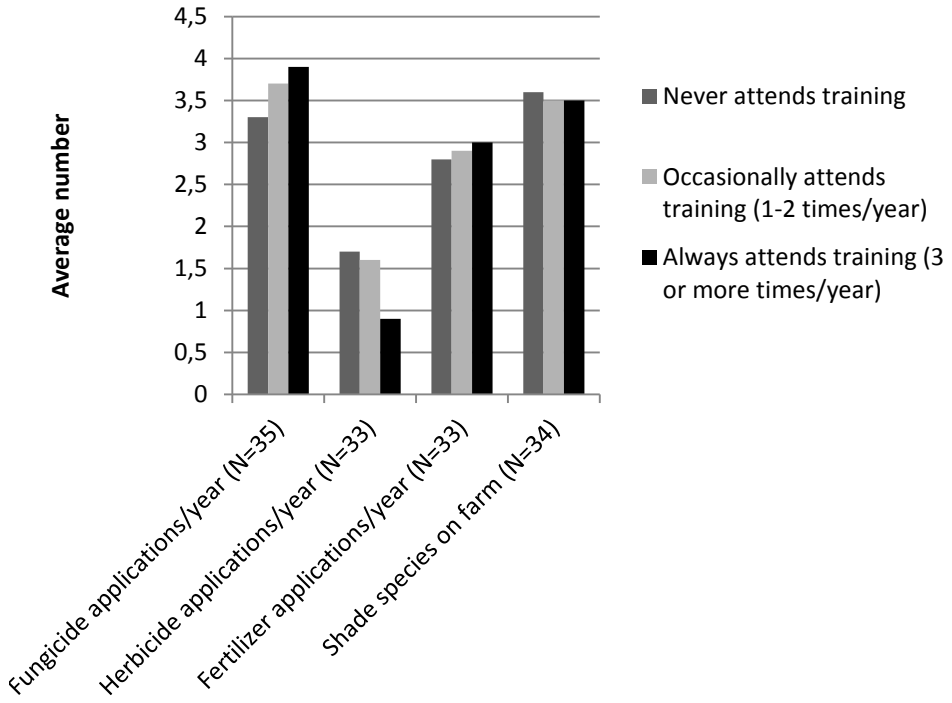

Figure 8 Frequency of farming practices in regard to participation in group training.

The recommendation of fertilizers is also problematic for certified cooperatives. Farmers who attend more training make slightly more applications (Figure 8). Nitrogen applications to coffee plantations in this region, even when they comply with official recommendations, exceed crop requirements (Castro-Tanzi et al., 2012). Certifications are not explicit on the use of fertilizers and generally refer to training. For example the Fair Trade standard states '*Training must include measures to ensure the fertilizers are applied in amounts that respond to the nutrient need of the crop*' (Fairtrade International, 2014). Cooperatives continue to promote high rates of nitrogen fertilization because they feel that raising yields is the only way to make coffee farming profitable. A cooperative manager tells us, '*The only solution to the economic problems of coffee producers is to double the production on the same amount of land*.' Certified coffee does not always provide a solution. Farmers may not receive a higher price for certified coffee (Snider et al., Submitted for Publication), so they rely on high yield to recover production costs. In fact, 62% (N=37) of farmers responded they would have applied more fertilizer in the past year if the price of fertilizer had been lower. None of the certification standards specifically address optimizing fertilizer applications, making this an environmental hazard which certifications have little hope of mitigating.

In some cases the tangible services provided by the cooperative had more impact on farming practices than trainings. The use of shade trees in the coffee plantation is a farming practice encouraged by all of the certification standards. Shade increases coffee quality but lowers plant productivity (Vaast, Bertrand, Perriot, Guyot, & Genard, 2006). However, there were no differences in number of shade trees among farmers who never, occasionally or always attended group training (See Figure 3). Cooperative 2, which is certified in Fair Trade and CAFE Practices offered shade trees free of cost to all producers, and Cooperative 4, which holds the same certifications, did not. Fifty percent of the members in Cooperative 2 responded that they had increased the number of shade trees on their plantation in the last 20 years compared to only 30% of the members of Cooperative 4.

Programs such as CAFE Practices and to a lesser extent Rainforest Alliance, which have explicit standards for maintaining a shade canopy in conjunction with high coffee quality standards have arguably the best potential to promote shade production, particularly if shade trees are provided free-of-cost to producers.

Conclusions

Certifications have the potential to induce more sustainable practices, but they put considerable strain on the technical department of cooperatives. Because the knowledge required to implement certifications is often initially beyond that of cooperative staff, certifications induce cooperatives to form new collaborations with other stakeholders and to play a much stronger role of intermediary than in the past. These collaborations increase the diversity of perspectives on sustainability issues that are discussed in cooperative meetings, creating a more holistic approach to coffee production and raising awareness about environmental issues. In this sense the certifications contribute to promoting more sustainable agricultural practices. The certifications also change the advisory services of the cooperatives. Advisory services were previously less intensive, contingent upon the training and perspective of one or more cooperative agronomists, and focused on production practices and disease management. Certified cooperatives have increased the diversity of themes discussed and offer trainings on climate change, integrated pest management, pesticide handling and

safety and soil management. Nevertheless, advisory methods rely mainly on a top-down approach, classroom trainings and individual field visits. Field days and farmer-to-farmer learning or discussion groups are not common in most cooperatives. While the cooperatives have shown a capacity to innovate in the formation of new alliances, there are few innovations in the methods in which advisory services are provided.

We observed changes at farm level related to the certifications, but they cannot be attributed to certifications alone. Certifications are one influence on the sustainability of farming practices. Other influences are environmental laws, initiatives of other entities such as NGOs or private companies, indicating a shift in the paradigms of the society. Except decreasing the use of dangerous pesticides, the changes are modest at farm level for different reasons. On one hand change is slow when it requires the unlearning of previous opinions or practices. On the other hand many cooperatives focus their advisory activities and services on certified members who can easily comply with the certifications requirements which limit the scope of changes. Moreover, if members are individually certified, this may mean that some members have access to more services than others. Certifications are most effective in changing the practices that do not compete with coffee yield or quality. Without a premium to offset lower yields from practices such as shade production or reducing agrochemicals, they have little power to change these practices.

Fair Trade has the greatest impact on the training services offered by cooperatives while CAFE Practices and Rainforest Alliance have greater impact on farming practices such as the use of shade trees. Rainforest Alliance also increases tangible services such as recycling services and the provision of shade trees. Utz has more effect on management practices such as the use of record books.

Based on this research we can recommend greater support of farmers' organizations in forming collaborations with outside stakeholders. These new collaborations should promote innovation in advisory methods and focus more on learning processes and exchange among members rather than simply knowledge transfer. In order to improve the sustainability of farming practices, more support

is needed for more tangible solutions such as the distribution of shade tree seedlings as well as farmer-to-farmer and field day-type trainings. Government policy should also support consortia, which are already effectively providing services to help cooperatives increase their sustainability

Chapter 6: Social Capital and Sustainable Coffee Certifications in the National Context of Costa Rica

Based on a manuscript by

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submitted for publication

Abstract

We have seen in the previous chapter that voluntary certifications provide direct and indirect environmental and social benefits to cooperatives and their members. They contribute to changing paradigms about sustainable farming and promote a more holistic approach to coffee production. They do this in part by engaging other stakeholders in the sustainability discourse. This can be considered an expansion of the organization's social capital. In this chapter we explore more deeply this less tangible effect of certification: the interaction between certification and social capital.

Social capital, defined as trust, reciprocity, rules, norms, sanctions and networks, has many applications in the adoption and management of voluntary certifications. On an individual level, generalized trust in others has been shown to be an important predictor of an individual's participation in voluntary environmental programs. On the organizational level, social capital, considered a public good, effects organizational learning, management and collective action.

To better understand the link between social capital and voluntary certifications, we conducted case studies of five Costa Rican coffee cooperatives. We used a mixed-methods approach consisting of qualitative interviews with cooperative administrators and quantitative household surveys. Social capital of the cooperatives was assessed in six dimensions: groups and networks, trust and solidarity, collective action and cooperation, information and communication, social cohesion and inclusion and empowerment and political action. We applied this information to its effects on the management of sustainable coffee certifications.

We found that the level of these six dimensions of social capital affected the manner in which cooperatives manage certifications, incentivize certified members and cooperate with outside organizations. On an individual level, generalized trust was found to have an important link with voluntary participation in Rainforest Alliance certification when no financial incentive was provided. Strategies for managing certifications have the potential to build social capital in cooperatives.

This research has important implications for the management of certifications and other similar voluntary environmental and social programs. It presents some important considerations for employing certification schemes in different national contexts.

Résumé

Nous avons vu dans le chapitre précédent que les certifications volontaires offrent des avantages environnementaux et sociaux, directs et indirects, aux coopératives et à leurs membres. Ces certifications contribuent à l'évolution du paradigme de l'agriculture durable, et à la promotion d'une approche plus globale de la production de café. Ce mécanisme à lieu par le biais de l'engagement d'autres parties prenantes dans le discours sur le développement durable. Cela peut être considéré comme une expansion du capital social de l'organisation. Dans ce chapitre, nous examinons plus profondément l'effet moins tangible de la certification sur le capital social.

Le capital social est défini comme la confiance, la réciprocité, les règles, les normes, les sanctions et les réseaux. Il a de nombreuses implications dans la gestion et l'adoption des certifications volontaires. Sur le plan individuel, il a été démontré que la confiance généralisée envers les autres est un déterminant important de la participation d'un individu à des programmes environnementaux volontaires. Sur le plan organisationnel, le capital social, considéré comme un bien public, affecte l'apprentissage organisationnel, la gestion de la certification et l'action collective.

Afin de mieux comprendre le lien entre le capital social et les certifications volontaires, nous avons mené des études de cas sur cinq coopératives de café au Costa Rica. Nous avons utilisé une méthodologie mixte constituée d'entretiens qualitatifs auprès des administrateurs de coopération et d'enquêtes quantitatives auprès des ménages. Le capital social des coopératives a été évalué à travers six dimensions: les groupes et les réseaux, la confiance et la solidarité, l'action collective et la coopération, l'information et la communication, la cohésion sociale et l'inclusion, et l'autonomisation et l'action politique. Nous avons analysé les effets du capital social sur la gestion des certifications de café durable.

Nous avons constaté que le niveau de ces six dimensions du capital social affecte la manière dont les coopératives gèrent les certifications, incitent les membres agréés et coopèrent avec des organisations extérieures. Sur le plan individuel, la confiance généralisée a un lien important avec la participation volontaire à la certification Rainforest Alliance, qui ne fournit aucune incitation financière. Les stratégies de gestion des certifications ont le potentiel de renforcer le capital social dans les coopératives.

Ce travail a des implications importantes pour la gestion des certifications et des programmes volontaires environnementaux et sociaux qui sont similaires. Il présente certains déterminants importants pour la mise en place de systèmes de certification dans différents contextes nationaux.

Resumen

Hemos visto en el capítulo anterior que las certificaciones voluntarias proporcionan beneficios ambientales y sociales directos e indirectos para las cooperativas y sus miembros. Contribuyen a cambiar los paradigmas sobre la agricultura sostenible y promover un enfoque más integral para la producción de café. Esto lo hacen en parte, a partir de la participación de otras partes interesadas en el discurso de la sustentabilidad. Esto se puede considerar una ampliación del capital social de la organización. En este capítulo se explora más profundamente este efecto menos tangible de certificación: la interacción entre la certificación y el capital social.

El capital social, definido como la confianza, la reciprocidad, las reglas, las normas, las sanciones y las redes, tiene muchas aplicaciones en la aprobación y la gestión de las certificaciones voluntarias. A nivel individual, la confianza generalizada en otros, ha demostrado ser un predictor importante de la participación de un individuo en programas ambientales voluntarios. A nivel de la organización se tiene, el capital social, considerado un bien público, los efectos de aprendizaje organizacional, la gestión y la acción colectiva.

Para entender mejor la relación entre el capital social y las certificaciones voluntarias, llevamos a cabo estudios de caso de cinco cooperativas de café en Costa Rica. Se utilizó un enfoque de métodos

mixtos que consiste en entrevistas cualitativas con los administradores de las cooperativas y encuestas cuantitativas de hogares. El capital social de las cooperativas se evaluó en seis dimensiones: grupos y redes, la confianza y la solidaridad, la acción colectiva y la cooperación, la información y la comunicación, la cohesión social y la inclusión y el empoderamiento y la acción política. Aplicamos esta información a sus efectos sobre la gestión de certificaciones de café sostenible.

Se encontró que el nivel de estas seis dimensiones del capital social afecta la manera en la que las cooperativas logran certificaciones, incentivar a los miembros certificados y cooperan con organizaciones externas. A nivel individual, se encontró una confianza generalizada de tener un vínculo importante con la participación voluntaria en la certificación de Rainforest Alliance, cuando no se proporcionó ningún incentivo financiero. Estrategias para la gestión de certificaciones tienen el potencial de aumentar el capital social en las cooperativas.

Esta investigación tiene implicaciones importantes para la gestión de la certificación y de los similares programas voluntarias ambientales y sociales. Presenta algunas consideraciones importantes para el empleo de los sistemas de certificación en diferentes contextos nacionales.

Introduction

Giovannucci and Ponte (2005) indicate that, in the right environment, voluntary certifications can create a virtuous cycle of empowerment in farmers' organizations. Conversely, group cohesion can be lost if certifications are poorly managed. Empirical evidence reports a wide variation in the effectiveness of certifications in improving livelihoods and protecting the environment. The evidence ranges from positive effects on livelihoods (Bacon, 2005) and the environment (A. Blackman & Naranjo, 2012) to negative effects on farmer income or equality (Cramer et al., 2014; Fraser et al., 2013; Getz, 2008; González & Nigh, 2005). The effectiveness of certifications depends largely on the national context (Elder et al., 2013).

Approximately 30% of the coffee produced in Costa Rica is standard-compliant (Potts et al., 2014). The low labor to land ratio in Costa Rica in the late 1800s along with the country's land tenure policies resulted in a coffee industry that was dominated by small and medium-sized farms which relied heavily on family labor (Luetchford, 2008; Williams, 1994).

In Costa Rica the coffee sector was the only agricultural sector that emerged from structural adjustment of the 1980s still dominated by small-holder production (N. L. Babin, 2012). State regulation helped maintain small-holder production by limiting the amount of profit that mills could retain for their services and setting minimum farm-gate prices (N. L. Babin, 2012; Vunderink, 1990). Other cooperative sectors, such as the dairy and the black bean sectors, do not enjoy similar high levels of social capital. The milk cooperatives in Costa Rica also are able to protect the interest of producers by influencing policy. This, however, is accomplished partly through cronyism within the government ministries (Maître D'Hôtel & Bosc, 2011). The black bean sector in Costa Rica is not able to protect the interest of producers due to the lack of human capital within the cooperative sector and lack of vertical connections to policy networks (Maître D'Hôtel & Bosc, 2011).

Costa Rica's small coffee cooperatives have largely overcome the problems of low human capital in cooperative administration and lack of agency with the formation of second-level cooperatives, in particular the Consortium of Cooperatives of Coffee Producers of Guanacaste and Montes de Oro

(Coocafe), which was created to help small cooperatives access Fair Trade certification (Luetchford, 2008).

The majority of the literature on certifications in Costa Rica describe a positive effect on farmer livelihoods in which incentives at the cooperative level are distributed in a transparent manner and the interests of small farmers are protected (Luetchford, 2008; Ronchi, 2002; Ruben et al., 2009). Analyses of the environmental effects of certifications in Costa Rica have shown small but measureable improvements in the sustainability of farming practices (A. Blackman & Naranjo, 2012; Quispe, 2007; Sibelet, Laffourcade, & Gutiérrez, 2015; Snider, Kraus, Sibelet, Bosselmann, & Faure, Manuscript submitted for publication). Studies on financial incentives for voluntary certifications in Costa Rica find that the effects on income are positive, although they are often insignificant (N. Babin, 2014). Nevertheless the Costa Rican coffee industry is not without corruption, and at least one case study found that cronyism in a cooperative and exorbitant interest rates charged by second-level cooperatives reduced farmers' financial benefit from Fair Trade (N. L. Babin, 2012). Because the overall analysis is that certifications are effective in Costa Rica and cooperatives are able to recover from an occasional lapse in transparency, it is valuable to examine the national context of Costa Rica to better understand which factors are important for certification efficacy.

Social and organizational components are vital to consider when implementing programs which aim to improve the sustainability of communities (Pretty & Uphoff, 2002). Social capital has many applications in the management, adoption and acceptance of sustainability certifications. Social capital encompasses cooperation, social organization and human interaction and is measured by proxies such as trust, reciprocity, rules, norms, sanctions and networks (Svendsen & Svendsen, 2009). Analyzing the social capital of a region or a nation gives us insight into why people do what they do and into the manner in which they do it (Gross & Rayner, 1985) and on the effectiveness of its organizations (Kramer, 1999).

Social capital has additional implications that are important to consider in the management of voluntary certifications. High levels of social capital can facilitate the conservation of natural

resources, but when levels are low state intervention may be required for effective natural resource protection (K. M. Sønderskov, 2009). The implementation of certifications requires education and training about new farming practices (Hatanaka, Bain, & Busch, 2005), and high levels of social capital have a positive effect on organizational learning (Chang, 2011), innovation (Carmona-Lavado, Cuevas-Rodríguez, & Cabello-Medina, 2010) and on the diffusion of information on sustainable agricultural practices (Compagnone & Hellec, 2015).

Certifications can build (Bacon, 2010) or destroy social capital (Elder et al., 2012; Getz, 2008). They also have the potential to improve the environmental and social sustainability of participants (Bacon, 2008). Though research shows differential effects of certifications in different national contexts, there is little research on which aspects national context may be important to predict the efficacy of certifications. This research attempts to begin to fill this gap. Because of the balance of social capital within a community is important for the effectiveness of collective action (Agnitsch, Flora, & Ryan, 2006) and the social capital of an organization influences that organization's effectiveness (Cohen & Prusak, 2001), we focus on these two aspects of social analysis.

The objective of this study is to better understand the link between social capital and voluntary certifications. We accomplish this by studying how social capital is manifested in Costa Rican coffee cooperatives and how these manifestations affect the management of certifications. We examine the interactions between the social capital of the membership and the social capital of the organization to better understand how cooperative institutions affect the membership and vice versa.

We use these results to discuss how the potential for voluntary certifications to build social capital can be increased to enhance both development and environmental protection and how national contexts affect this process.

Classifying social capital to predict collective action

Social capital can be classified into *bonding* and *bridging* social capital (Svendsen & Svendsen, 2009). Bonding social capital (sometimes called group (Gross & Rayner, 1985) or relational embeddedness

(Carmona-Lavado et al., 2010)) refers to networks of members within the same group or category, and bridging social capital refers to social links and trust of people from outside groups. By visualizing the balance between the two classifications of social capital on a two-by-two graph, we can better understand the interactions between the two (See Figure 9). A deficit of one form of social capital can be compensated by the other (Agnitsch et al., 2006). The advantage of classifying these social units into the bridging/bonding framework is that by understanding the dynamics of social processes we can apply them to other societies (Gross & Rayner, 1985) and predict levels of collective action in a group or community (Flora, Flora, & Gasteyer, 2015). Organizations with high levels of bonding social capital are close-knit and solidary. Bonding social capital increases within a group with the frequency and diversity of interactions with other members (Caulkins, 2009).

Bridging social capital is manifested as generalized trust in others, vertical social networks, inclusion and membership in cooperative associations (Svendsen & Svendsen, 2009). Bridging social capital mitigates group boundaries and lowers individual autonomy (Caulkins, 2009).

Groups are not homogenous in their composition and contain a mix of individuals which may belong to the four different quadrants seen in Figure 9, though one quadrant may be more prevalent. Organizations and individuals are also not static within one quadrant, and the balance of bridging and bonding social capital may change due to internal and external forces. Social organization is dependent on the interaction among groups and individuals in the four quadrants represented in Figure 9 (Caulkins, 2009).

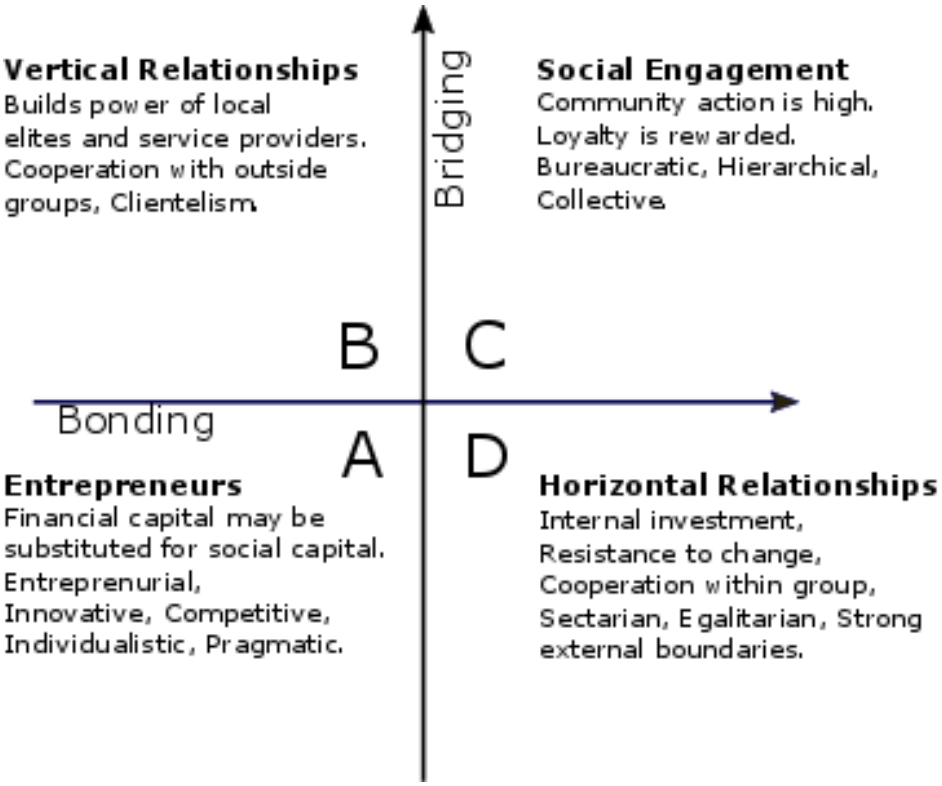

Figure 9 : Balance between bridging and bonding social capital in societies and the implications on social engagement. Adapted from various authors (Bitzer et al., 2008; Caulkins, 2009; Flora et al., 2015; Gross and Rayner, 1985).

Gender inclusion is an important component of the Fair Trade standard (Ruben & Zuñiga, 2011) but cooperatives have had mixed results regarding the inclusion and empowerment of women (Bacon, 2010; Lyon, 2008). Women are often excluded from development programs due in part to the traditional values of some cultures and to unequal opportunities inherent in the program design (Gutiérrez-Montes, Emery, & Fernandez-Baca, 2012). Women also generally develop lower levels of bridging social capital than men (Collado, 2007; Gotschi, Njuki, & Delve, 2009). This combination of factors compounds the exclusion of women from conservation programs. However if women are included in leadership positions in mixed-gender groups their levels of social capital match those of men (Gotschi et al., 2009). Furthermore, women's presence in groups increases the collaboration, solidarity and conflict resolution and may direct the group toward a more regenerative rather than reactive approach to natural resource management (Westermann, Ashby, & Pretty, 2005).

Voluntary Certifications in Costa Rica

Costa Rican cooperatives actively participate in certifications. The most popular certifications within the cooperatives are Fair Trade, Rainforest Alliance, Starbuck's Coffee and Farmer Equity (CAFE) Practices, Utz and organic, while fewer than ten percent of Costa Rica's 22 coffee cooperatives participate certifications such as 4C, Nespresso AAA and Harvested by Women (Snider et al., Submitted for Publication). Cooperatives are essential for small farmers to access the benefits of certifications (Faure, Le Coq, et al., 2012), and cooperatives may choose to certify all (collective certification) or only a portion (individual certification) of their members (Snider et al., Submitted for Publication). Costa Rica has a strong cooperative sector that was created to increase economic efficiency, but also to pursue social reform and embeddedness (Luetchford, 2008). The cooperative movement in Costa Rica's coffee sector began in the early 1900s with a collective action of small producers who wanted to 'free themselves from the tyranny of the private mills,' (Castro, 2013), giving small-scale farmers important access to export markets (Maître D'Hôtel & Bosc, 2011).

The standards for certifications are similar, but focus on promoting different aspects of sustainability (Raynolds et al., 2007). Fair Trade and Rainforest Alliance standards emphasize social and environmental themes, while Utz focuses on traceability and good agricultural practices (Raynolds et al., 2007). CAFE Practices and Nespresso AAA are private standards which focus on quality and environmental management (Alvarez et al., 2010). Harvested by Women focuses on gender inclusion and employment relationships (International Trade Centre, 2012) while organic certification emphasizes environmental regulation (Raynolds et al., 2007).

Materials and Methods

Snider et al. (Submitted for Publication) describes a typology of Costa Rican coffee cooperatives based on their participation in certifications. We used this typology to choose five cooperatives for further study. Cooperatives were chosen for a diversity of type, geographical diversity and diversity of certifications (see Table 16). Case studies were conducted using a mixed-methods approach which

consisted of semi-structured interviews (N. Sibelet et al., 2013) with cooperative administrators to assess the organizational levels of social capital and quantitative surveys of members to assess individual levels of social capital. Table 16 summarizes the interviews and surveys conducted at the five cooperatives.

Table 16: Summary of data collection at six Costa Rican coffee cooperatives.

Coop number	Type	Region	Approximate number of members	Certifications	Qualitative interviews of administrators	Quantitative surveys of members	Percentage of total membership surveyed	Percentage of female members in coop	Percentage of female members surveyed
1	1	Guanacaste	170	Fair Trade, organic	1 manager	19	11	11	10
2	4	West Valley	2100	Rainforest Alliance, Utz, CAFE Practices, Nespresso AAA	1 manager, 3 agronomists	43	2	45	37.5
3	2	Tarrazú	650	Fair Trade, CAFE Practices	1 manager, 1 agronomist	13	2	30	23
4	4	Tarrazú	2900	Fair Trade, CAFE Practices, Rainforest Alliance, Harvested by Women	3 managers	43	1,4	32	28
5	3	West Valley	50	none	1 manager	2	4	unknown	N/A
Total interviews/surveys					11	120			

Organizational social capital

Qualitative interviews with cooperative administrators covered topics such as strategies for managing certifications, partnerships with other organizations, cooperative programs, services and policies.

Jones and Woolcock (2007) outline six dimensions of social capital: groups and networks, trust and solidarity, collective action and cooperation, information and communication, social cohesion and inclusion and empowerment and political action. Each of these dimensions has both bridging and bonding components. Each cooperative was given a rating between + + (very high levels of social capital) and − − (very low levels of social capital) in each of the six dimensions. These ratings are based on the observed indicators as interpreted by the authors (see Table 17).

Social capital of cooperative membership

One hundred twenty quantitative surveys were conducted based on snowball sampling of members of the five case study cooperatives in proportion to the number of members in the cooperative and the percentage of female members in each cooperative. The survey was adapted from the core questions of the World Bank Social Capital Survey (Grootaert, 2004) and was conducted in Spanish, the mother tongue of all interviewees. Participants were asked questions pertaining to the six dimensions adapted from Jones and Woolcock (2007). The survey questions were divided into those measuring bridging and those measuring bonding social capital. Answers were recorded either as a yes or no answer, an absolute number (for example, the number of groups to which the individual belongs), or on a Likert scale (for example, 'How much do you trust the cooperative's administration?' 0= to a very small extent, 1= to a small extent, 2= neither great nor small extent, 3= to a great extent, 4= to a very great extent). Two focus group discussions were held with cooperative members to crosscheck and discuss results.

We created an index to graphically depict the responses of cooperative members on a 2X2 graph and to analyze which patterns emerge within the cooperatives. We applied the following formula to each response to obtain a number between 0 and 1:

$$\frac{Point\ value\ of\ response - Vmin}{Vmax - Vmin}$$

This formula is used to normalize values measured on different scales to a common scale between 0 and 1. This enables us to 1) compare values 2) measure how far the achievement of the indicator is from the optimum (the maximum value = 1) and 3) integrate the different values into two single combined multidimensional indexes (one to measure bonding, the other to measure bridging).

An average score for bridging social capital (y axis) and bonding social capital (x axis) was calculated for each respondent and plotted in Figure 2. An elliptical regression was plotted for the data from Cooperatives 1-4 (Cooperative 5 was excluded because of small sample size) using a computer algebra system (the software Maple).

Results and Discussion

Social Capital in Cooperatives and the Effects on the Management of Certifications

Social capital at the cooperative level

Based on the interviews and surveys implemented, it can be said that the social capital in Costa Rican cooperatives affects how they manage certifications, including who benefits from certifications and how changes in farming practices are incentivized (see Table 17). Costa Rican coffee cooperatives have a long experience of mutually beneficial relationships with buyers, slowly building trust between the actors. A corporate buyer from Starbucks said in an interview, '*To be honest, I've never had a problem with [cooperatives from] Costa Rica. They always honor their contracts*.' Though levels of generalized trust are in the mid-range compared to other countries in Latin America (Latinobarómetro, 2015b), high levels of governmental regulation of the coffee industry compensate for lack of generalized trust. Interpersonal trust, when it is lacking, is replaced by institutional trust (Frey & Jegen, 1999).

Cooperative 1 is a small cooperative in a marginal coffee-growing area. It has recently dismissed administrators and members of the board because of corruption. Nevertheless, the cooperative was able to eject the corrupt individuals and, by dealing with the dismissals in a transparent manner and by frankly communicating the financial situation, rebuild trust among the members. As a result of this effort, 47% of the members surveyed responded that trust in the administration has increased since the corrupt individuals were removed.

The small number of members and geographic isolation of the communities are a challenge for Cooperative 1. The vast majority of members do not have regular internet access, so cooperative employees communicate with members by placing flyers on their doors. While this puts considerable strain on the human resources of the cooperative it also increases face-to-face communication. The manager at Cooperative 1 says '*I know [a certain member] can't read, so I call him [instead of putting a note on his door] when there is a training.'*

Cooperative 1 (as well as Cooperative 3) is able to increase its agency by membership in a consortium. Small cooperatives find they have more political influence through their participation in the consortium Coocafe. The former manager of Coopeldos is quoted in Luetchford (2008), '*it is not the same to attend a meeting as a representative of the 500 members of one cooperative as it is to go with the support of the 3,000 members of Coocafe'*. The agency and the human capital that Cooperative 1 gets from its membership in Coocafe make its participation in certifications possible.

Cooperative 2 is a large, diversified cooperative which makes good use of its networks to provide training and other services to members. Because of its medium-high levels of bonding social capital, the cooperative maintains many social policies such as investing profits in local communities and in schools. However, the large size of the cooperative makes communication difficult and not all members can attend assemblies or access certifications.

The high bridging social capital is manifested in the way the cooperative rewards high-performing members with access to certifications. The cooperative certifies only enough members, often members of the board, to satisfy the demand for certified coffee. This allows the cooperative to provide a small financial incentive and specialized training to certified farmers. Large farms are given priority for certification and other members are often unaware of the opportunities for certification. However, the cooperative strives to be inclusive in other ways by promoting the membership of women and by offering training for day laborers.

Cooperatives 3 and 4 (the two cooperatives in Tarrazú), show the highest levels of bonding social capital and group identity among the cooperatives in this study. The older members of Cooperative 3 remember the struggle and collaboration that was needed to form the cooperative in the 1970s. A founding member of the cooperative remembers the significance to the members, '*Before the cooperative we had to ride six hours on horseback to deliver our coffee.*' However this strong feeling of solidarity sometimes results in the exclusion of outsiders. The same member says, '*A manager must be from the village. Outsiders cannot understand our problems*.' Founding members normally have a stronger bonding connection to their cooperative (Wollni & Zeller, 2007).

Luetchford (2008) characterizes Costa Rican coffee cooperatives as a protective mother which takes care of its children, or '*mama cooperativa*.' This relationship is particularly apparent in Cooperative 3 who refers to '*our cooperative family'* in its internal documents. This serves to embed the cooperative into the economic and social life of the community. A long-time member of the cooperative explains why she is a member, *'They are part of the community. They pay attention to the community.'* High levels of bonding social capital and a strong sense of community prompt the cooperative to certify all members despite the lack of demand for certified coffee and the strain that this puts on the human resources of the cooperative. The cooperative agronomist explains the decision, *'In that way everyone has the same access to training*.' The decision to certify all members is based on the management's desire for equality rather than on economics; the cooperative could save on auditing and management costs by certifying only enough farms to fulfill demand.

Cooperative 4 also places a strong emphasis on the equality and solidarity of members. It pays all members the same price for their coffee, regardless of the elevation at which it was produced or the certifications. A manager explains, '*Coffee farms are handed down from generation to generation. We don't want to punish someone for being born at a low elevation*,' exemplifying the close-knit community typical of groups with high bonding social capital.

The high levels of bonding social capital in Cooperative 4 are balanced by somewhat higher levels of bridging social capital than observed in Cooperative 3. The cooperative allows individual members to pursue Rainforest Alliance certification for their farms (the cooperative manages and owns the certification). However the cooperative's ideology of equality does not allow it to pay these members a differential price for the certification. The cooperative instead offers in-kind support in the form of specialized trainings, equipment and plant material.

Cooperative 5 has low levels of all six dimensions of social capital. The members are weakly united producers of high quality coffee. Unlike most cooperatives, it does not provide any services to its members beyond basic processing of the harvest and is untethered by loyalties to outside organizations. A member of the board describes the coop as '*a black sheep*' and says that other

cooperatives in the area '*consider us as a threat.*' Administrators of Cooperative 5 consider the cooperative's existence tenuous because they have not been able to leverage the funding from state institutions such as INFOCOOP (National Institute of Cooperative Support), a public institution that offers credit and support to cooperatives. '*The large cooperatives dominate these organizations*,' explains the cooperative manager. The organizational culture of Cooperative 5 is individualistic, competitive and entrepreneurial.

Perhaps the most limiting factor in Cooperative 5's access to certifications is the lack of empowerment and political action. Small cooperatives often need the support of consortia to access certifications (Ronchi, 2002; Snider et al., Submitted for Publication), but Cooperative 5 has shown an unwillingness/inability to work with other organizations and cooperatives. Empowerment and political action is the dimension that allows individuals and organizations mobilize the social capital that they have through negotiation and influence on the institutions which affect them (Jones & Woolcock, 2009) and is one of the most important factors in activating the social capital inherent in communities (Krishna, 2002).

Cooperatives with the highest levels of bonding social capital and therefore, the highest sense of group solidarity, choose to pay all members equally, regardless of quality or certifications. If they offer incentives to certified farmers they offer it as in-kind contributions of plant material, training or equipment.

Cooperatives with the highest levels of bridging social capital participate to a limited extent in several certifications and offer these certifications to a few members who are able to meet the standards. The balance of bridging and bonding social capital is essential to prevent this selective participation from causing high levels of inequality among the members.

Corruption in the administration does not have to be lethal to the trust in a cooperative if it is dealt with quickly and in a transparent manner. Two cooperatives in this study were able to recover from corruption by drawing on the social capital in the organization.

Table 17: Summary of observed indicators of six dimensions of social capital at fibe cooperatives and how it is manifested in the management of certifications.

Coop number	Groups and Networks	Trust and Solidarity	Collective Action and Cooperation	Information and Communication	Social Cohesion and Inclusion	Empowerment and Political Action	Participation in Certifications
1	+ Does not seek out collaborations with other entities, but works with those that approach them.	+ Corruption in former coop administration has damaged trust, however members display trust in current administration. Corrupt administrators were dismissed in a transparent manner.	+ Volunteer road-building crews are common within the communities, but geographic distance reduces collective effort of cooperative.	+ Isolation of communities makes communication difficult, but small number of members somewhat counteracts this. Attendance at cooperative events is relatively high.	+ Cooperative policies do not encourage the participation of women.	+ + Participation in consortium empowers the small coop and compensates for lack of human resources.	Financial compensation for individual certification. Certifications are a result of the efforts of an external NGO, not collective action on the part of the members, which suggests a level of clientelism.
2	+ + Many networks, both horizontal and vertical. Use of C6governmental organizations and NGOs to provide training and services related to certifications. Coordination of harvest with local mills and coops.	+ + High levels of trust in administration.	+ + Collective action high in rural areas. Coop balances social and entrepreneurial policies	+ For most members coop is main source of information about coffee production. However attendance at coop events is low. Large size makes communication difficult.	+ Good inclusion of women. Some trainings open to only certified members. The only cooperative to offer training for day-laborers.	+ + Large and established cooperative, very influential in government organizations.	Business-like approach to certifications. Few, carefully chosen and compensated members for individual certifications. Certified members must sign a contract to sell 100% of harvest to the coop.
3	+ Many vertical network connections with governmental organizations and NGOs. Weaker horizontal connections with local mills and coops.	+ Problems with corruption and incompetence have damaged trust. Members of the administration disagree on appropriate level of transparency.	+ Members of board of directors were voted off the board in a democratic manner, albeit not without name-calling and lack of transparency. Older members talk about the collective action efforts to form the cooperative.	+ + Cooperative is important and often only source of information about coffee production.	+ + Extensive efforts on part of administration to ensure equal opportunities for all members.	+ + Participation in consortium empowers the small coop and compensates for lack of human resources.	All-or-nothing approach-- only collective certifications with premium shared among all members.
4	+ Many vertical network connections with governmental organizations and NGOs. Weaker horizontal connections with local mills and coops.	+ Strong sense of solidarity within cooperative. Some communities displayed distrust of outsiders (interlocutor) and refusal to complete the survey.	+ + Direct sales promote collective action of communities with the help of the cooperative.	+ Coop is of medium importance as a source of information about coffee production/disease. Attendance at cooperative events is low.	+ + Efforts made to ensure equality of all members and inclusion of women. Certified members receive more training and more farm visits.	+ + Large and established cooperative, very influential in government organizations.	Both collective and individual certifications but all producers paid same price regardless of certification. In-kind support for individually-certified members.
5	– Very few networks. "we are like the black sheep among the cooperatives.[1]"	+ Members are free to sell to any buyer, not required to sell to cooperative.	– Cooperative arose out of struggle for recognition of superior quality, but members are loosely affiliated.	– Two meetings per year and no other cooperative events/trainings.	– No records on the number of women in cooperative. Only cooperative to restrict membership to producers at high elevation.	– – Governmental Organizations "have turned their backs on us.[1]"	None. Lacks networks to harness to provide services to access certification. Lacks agency.

[1] Source: Interview with cooperative manager

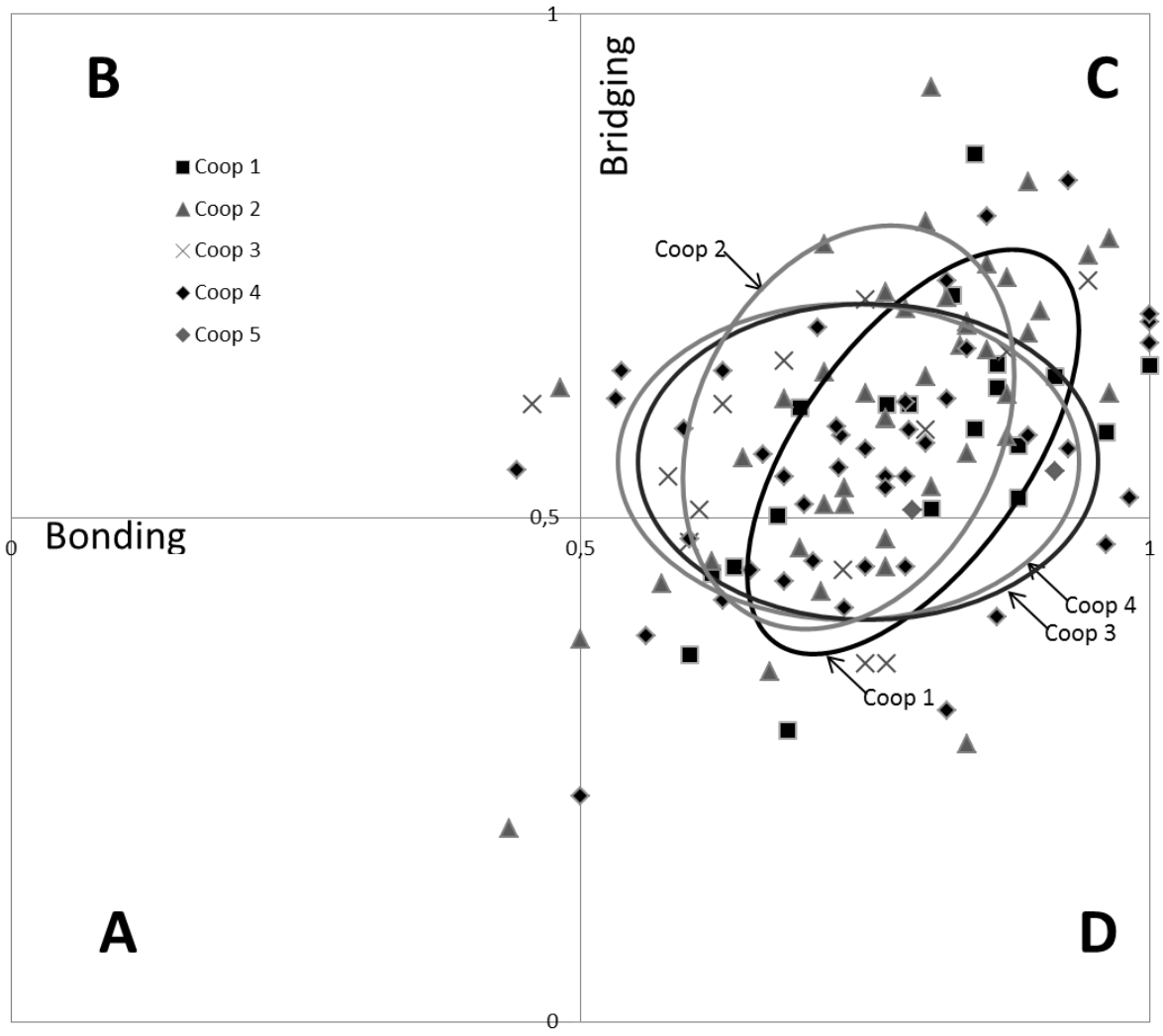

Figure 10: Levels of bridging and bonding social capital of the membership of four Costa Rican coffee cooperatives.

Bridging and Bonding Social Capital in Costa Rican Cooperatives

The results of the quantitative surveys of members of Cooperatives 1-5 are shown in Figure 10 (Cooperative 5 does not have an elliptical regression because of small sample size). The goal of this analysis is to describe the social capital of the social unit of the cooperative membership. Therefore, we look at the general pattern of the data points. The elliptical regression shows that the differences between individuals are greater than the difference between the cooperatives. We see very little difference among the cooperatives, with the majority of the responses falling in the lower middle portion of Quadrant C. This is indicative of medium-high levels of bridging social capital and high levels of bonding social capital. Bonding social capital is normally higher than bridging social capital in Latin America (Fukuyama, 2001), and membership in the cooperative gives individuals agency and

access to outside information that they would not normally have. Institutional trust also compensates when generalized trust is low (Frey & Jegen, 1999), further helping to balance the memberships' high levels of bonding social capital with their lower levels of bridging social capital.

Incongruities between the social capital of membership and organization

We observed several cases of incongruity between the social capital of the cooperative membership and the social capital of the organization. We attribute this to the strong influence of the social capital and ideologies of administrators of the cooperative on the policies and management of the cooperative. Administrators can use policies to promote a sense of group identity (Cohen & Prusak, 2001), as we observed in Cooperatives 3 and 4, which put a strong emphasis on equality within the cooperative. However it is not clear from the results in Figure 2 that these policies have had a great effect on the social capital of its membership.

Cooperative 3 has the strongest ideology about equality and this is reflected in its management of certifications: all certifications are managed as collective certifications. A cooperative administrator says, '*The message we want to give to the producers is that everyone is equal,*' demonstrating a feeling of collectivism in the cooperative policy. However this feeling is less strong among the members. Thirty-one percent of the members said that the cooperative's policy of paying all members equally with no financial rewards for higher quality caused 'a little bit of tension' among the members. Because of the effect that a small group of administrators has on organizational culture, we find that the social capital of the administration is not always perfectly aligned with that of the members.

Cooperative 4 also has a strong organizational ideology of equality, reflected by its policy of paying the same price to all members, regardless of elevations and certifications. A manager acknowledges the members do not completely share this ideology, '*The payment of a differential for quality is a difficult theme. The farmers want it, but we choose not to pay for it. It is a social economy*.'

An unintended consequence of a cooperative's policy of equal payment may be a reduction in overall quality. We also see a high number of micro-mills opening in the Tarrazú area where Cooperatives 3

and 4 are located which are started by farmers who feel they produce a high quality coffee and would like to be compensated for it. A small-holder farmer in Tarrazú told us '*I sell my highest quality coffee to the micro-mill where they pay a good price for it and the rest I sell to the cooperative*.' A large cooperative in the West Valley with a policy of equal pricing also encountered this problem. The result was the creation of Cooperative 5. The manager at Cooperative 5 elaborates, '*we felt we had a really high quality product, but they [the administration of the large cooperative] wouldn't process it separately [and offer a higher price] so we started our own cooperative.*' Eventually the large cooperative changed its one-price policy and now offers a premium to individually-certified members.

The board members of Cooperative 5 are members of several professional organizations, exhibiting high levels of personal bridging social capital. However, the cooperative has not been able to take advantage of the bridging capital of its members and is left isolated. Though the sample size of the survey of the membership of Cooperative 5 is very small (two members equal to 4% of the membership), the indices for these two members fall within the average of the members of other cooperatives. The observed indicators of organizational social capital, however, place the cooperative in Quadrant A.

Generalized Trust and Voluntary Participation in Certification

Generalized trust (the belief that most people can be trusted) is an important component of social capital. Generalized trust has been linked to participation in collective action and voluntary programs (Anheier & Kendall, 2002; Paxton, 2007), in particular environmental programs (Lubell, 2004; Sønderskov, 2008; Yandle, Hajj, & Raciborski, 2011). Individuals with high social capital voluntarily participate in collective environmental activities, confident that others will do the same (Pretty, 2003). Generalized trust is needed for fundamental changes in sustainability programs because, as stated by Cohen and Prusak (2001), '*Force can only compel compliance, and compliance is not enough. Commitment is required, and commitment cannot exist without trust*.'

Working in the Tarrazú region, the same geographical area as Cooperatives 3 and 4, Hopfensitz and Miquel-Florensa (2013) found that cooperative members with Rainforest Alliance certification contribute significantly more to the public good in laboratory behavior experiments than uncertified members. The researchers correlate the results of their laboratory experiment (higher public goods contributions) with the real-world behavior of the participants (membership in the voluntary Rainforest Alliance certification program). Because of the specific guidelines on the fair treatment and good working conditions for workers and protection of common pool resources such as water and biodiversity (Rainforest Alliance & SalvaNatura, 2010), participation in Rainforest Alliance certification can be considered a contribution to the public good.

Other studies have found a positive correlation between generalized trust and higher public goods contributions in experimental games (Anderson, Mellor, & Milyo, 2004), and so generalized trust and public goods contributions can both be linked with participation in voluntary certifications.

Our findings confirm this. In Cooperative 4, a large cooperative with 2900 members, 120 of whom have voluntarily complied with Rainforest Alliance certification, we see higher levels of generalized trust in certified (45%) than uncertified (25%) members (see Table 18.) Rainforest Alliance certification has extensive regulations protecting the environment (Raynolds et al., 2007). Farmers' main motivation to participate in Rainforest Alliance certification is to improve the environmental sustainability of their farm (Quispe, 2007). Therefore we conclude that participation in Rainforest Alliance certification is correlated with higher levels of trust in much the same way as participation in other voluntary environmental programs (Kim Mannemar Sønderskov, 2009).

In Cooperative 2, also a large cooperative with 2100 members, only six of whom have Utz certification, we see no significant difference between generalized trust of certified and uncertified members. Utz is also considered a sustainable coffee certification because it has both environmental and social standards, although both sets of standards are less stringent than Rainforest Alliance. The main emphases of Utz certification are on recordkeeping and traceability (Raynolds et al., 2007).

Our study contributes to the evidence that Rainforest Alliance-certified farmers have higher levels of trust which compel them to contribute to the public good, in this case by voluntarily protecting natural resources. Hopfensitz and Miquel-Florensa (2013) conclude that the norms and sanctions associated with Rainforest Alliance certification strengthen trust among the participants. However, since most participants have been certified for fewer than five years, evidence is weak that participation in this program has built these high levels of trust. We argue, in accordance with Nannestad (2007), that causality runs from trust to voluntarism. Rainforest Alliance certification was not randomly assigned to members; participants either volunteered for the certification or were asked by cooperative administrators to participate because of natural resource protection practices already in place on their farm and because of their history of loyalty to the cooperative. The manifestations of generalized trust displayed by these individuals indirectly played a role in their participation. One certified members said that the agronomists from the cooperative '*looked for me [to participate in the certification] because I had a lot of shade trees*.' Another certified member explains that he joined Rainforest Alliance because he values biodiversity on his farm, '*My mentality is similar to that of the certification*.' The low (although rapidly growing) demand for Rainforest Alliance certified coffee (Potts et al., 2014) means that cooperatives such as Cooperative 4 can rely on members who have intrinsic motivations to uphold the norms of certification and the cooperative does not have to resort to direct economic incentives to induce participation (Flora et al., 2015).

Cooperative 4 has a strong ideology of equality and they feel that it is important to pay all members the same price, regardless of certifications, elevation of the farm or quality. '*We are all equal,'* the management has said many times in interviews. They do acknowledge that compliance with certifications has significant costs to the producers and the cooperative provides free training, shade tree seedlings, cuttings of plants used for vegetative barriers, personal protective equipment and compost to help certified producers upgrade their farms to comply with the standards.

Table 18: Frequency of generalized trust among Rainforest Alliance certified members, Utz certified members and uncertified members of cooperatives.

Response	Coop 4		Coop 2	
	Rainforest Alliance certified (N=11)	Uncertified members (N=32)	Utz certified (N=6)	Uncertified members (N=37)
Generally speaking, one can trust most people	45%	25%	17%	24%
One can't be too careful when dealing with others	55%	75%	83%	76%
Total	100%	100%	100%	100%

The reason that we see a difference in the generalized trust of certified members in one cooperative and not the other may have to do with financial incentives. Farmers' primary motivation to participate in Utz certification is to earn a higher price (Quispe, 2007). Cooperative 2 feels that members should be financially rewarded for their participation in voluntary standards. '*The producer needs money,*' says the sales manager. This premium is useful in incentivizing farmers to participate in the program and acknowledges the extra bookkeeping required for the certification.

Pretty and Smith (2004) maintain that financially-compensated participation in environmental programs does not positively impact biodiversity nor cause lasting change in behavior. However, there is evidence that compensated participation, such as participation in payment for environmental services programs, increases social capital among the participants by forging bridging network connections (Pagiola, Arcenas, & Platais, 2005). Paid participation may be a way to increase participation in environmental programs in areas where social capital is low enough to inhibit participation.

The difference observed between the two cooperatives may also be linked to the differences in the standards of the two certifications. While participation in Rainforest Alliance can be considered a contribution to the public good, farmers consider participation in Utz a business decision (Quispe, 2007).

Social Capital and Certifications: A Virtuous Cycle?

The general consensus on social capital is that it is easy to destroy but difficult to build (Colletta & Cullen, 2000; Putnam, Leonardi, & Nanetti, 1994). However, Durston (1998) gives a more optimistic view of the potential to construct social capital, even in communities where it appears not to exist. These communities possess a latent social capital that can be activated with well-managed development programs.

We see the potential for cooperatives to use certifications to increase social capital in four main areas: strengthening cooperatives and their embeddedness in the community and the local economy, increasing the cooperative's external network connections, reinforcing norms by way of standards, and increasing inclusion.

Strengthening Cooperatives' Embeddedness

Through globalization, traditional systems of economic exchange become disembedded from social relations as transactions become more open and less personal. This transformation lowers social capital (Colletta & Cullen, 2000). The social component inherent in the cooperative model makes cooperatives exemplary of economic embeddedness and can serve to counteract this transformation (Levi & Pellegrin-Rescia, 1997).

Fair Trade and, to a lesser extent, organic certification, serve to re-embed agriculture and agricultural cooperatives into natural and social processes by creating alternative trading networks which transcend competition based solely on price and by creating stronger links between producers and consumers (L. Raynolds, 2000).

We found a strong sense of community within the cooperatives. When asked why they joined their cooperative, members participating in a focus group discussion described how the cooperative is an integral part of their community. '*[I joined the cooperative] to be part of something bigger.' 'I am the owner.' 'The cooperative is more stable. The others [private mills] disappear.'*

Costa Rican cooperatives, particularly those with high bonding social capital which engenders a strong sense of solidarity within the cooperative, often use certification premiums to support

community programs. Cooperative 4 uses the premiums earned from Fair Trade and Rainforest Alliance to fund their sustainability program. The program activities include health fairs and environmental education programs for children.

Longevity, consistency and regularity of contact between farmers and advisors are essential for building the social capital needed to turn information about sustainable farming technique into usable knowledge (Fisher, 2013). We found an increase in interaction between cooperative administrators and members resulting from certifications. Certifications oblige cooperatives to offer more intense and diverse training to their members and increase the frequency of farm visits by agronomists and technicians.

Nevertheless, most of the producers' network links created by certifications are horizontal links within the cooperative. The vertical links created by certifications are mainly unidirectional, providing producer information to consumers. Farmers and cooperatives are unlikely to gain information about the consumers of certified products (Daviron & Ponte, 2005).

We see potential for building multi-directional vertical links in community-focused direct trade, either in combination with or independent of certifications. Cooperative 4 engages in direct trade which has the potential to build social capital better than certifications alone. The cooperative processes small batches of coffee harvested from communities within the cooperative. The cooperative then finds a buyer interested in the specific quality and flavor profile of the coffee produced in this community. The buyer, often a gourmet coffee shop in Australia, the United States, or Japan, pays a premium for the product, often as much as twice the current price on the New York Stock Exchange, and a portion of the premium is invested by the cooperative into the community. The community holds a series of meetings, facilitated by employees of the cooperative, to vote on how this premium will be used. The funded projects benefit the entire community, such as improving roads, schools or public works. The members work collaboratively to implement the project, building bonding social capital by working together for a common cause. This bonding social capital is

important to avoid a patron-client relationship, or clientelism, in which outside entities determine community priorities (Flora et al., 2015).

Direct trade can also build bridging social capital. Luetchford (2008) devotes considerable attention to the notion of the Fair Trade premium in the gift ideology and norms of reciprocity associated with it. Nevertheless, in Fair Trade (and other certifications which offer a premium) the gift is from a faceless consumer. Unlike certifications, direct trade gives producers some information about the buyer, at least the geographical location, which allows producers to put a face on the gift-giver. This creates relational embeddedness between the two communities and helps complete the circle of the social exchange (Levi & Pellegrin-Rescia, 1997; Smith, 2007). The balance of bridging and bonding social capital that is supported with direct trade is important for sustainable growth within the cooperative.

Increasing Network Connections at the Cooperative Level

Certifications also build social capital at the cooperative level in the form of network connections. Cooperatives are forced to expand their networks by making links with other organizations, such as other cooperatives or consortia, NGOs which facilitate the certifications process, or governmental organizations which provide training to members or administrators (Snider et al., Manuscript submitted for publication). Associations with middle-level actors such as NGOs and certification bodies are important for building social capital at an organizational level (Durston, 1998). Conversely, weak vertical connections and a lack of supportive NGOs can undermine the organizational communication and capacity building necessary to benefit from certifications (Pirotte et al., 2006).

We observed a training program funded by Starbucks with the goal of building farmer capacity in cooperatives which participate in CAFE Practices certification, specifically in the areas of fertilizer optimization, soil protection, shade tree management and recordkeeping. This program linked actors from four cooperatives (both administrators and members), the environmental NGO Earthwatch and the Tropical Agricultural Research and Higher Education Center (CATIE for its Spanish acronym) over a period of two years. Other examples of associations directly related to certifications are alliances

with local NGOs to recycle pesticide containers for compliance with Rainforest Alliance certification; a training given in conjunction with the Ministry of Agriculture, the cooperative, the National Coffee Institute (Icafe) and the National Climatological Institute for Rainforest Alliance and Utz-certified members; and an alliance between a cooperative and a local university to provide training related to Rainforest Alliance and CAFE Practices certifications.

Reinforcing Norms and Rules to Strengthen Interpersonal Trust

When certification standards are strictly-enforced and when free-riding is not possible, they have the potential to build social capital among participants by reinforcing norms, rules and sanctions (Hopfensitz & Miquel-Florensa, 2013). When individuals see that rules are honored and non-compliant behavior is sanctioned, cooperation is fostered (Pretty, 2003). This process of building trust through compliance with norms may need an outsider to enforce compliance in communities where norms of reciprocity are weak or where federal legislation or sanctions are absent (Pappila, 2013). In certifications the role of enforcement is filled by third-party auditors.

In Costa Rica, strict governmental regulation means that certifications are not needed for compliance with quality norms. Sanctions imposed by cooperatives for other infractions of certification standards are usually minor. An administrator at Cooperative 4 tells us that in the case of members who do not comply with certification standards, '*There is no punishment, only feedback.*' Cooperative 3 takes a slightly stronger approach, '*If a member uses a prohibited pesticide he [or she] cannot sell to the cooperative for the rest of the harvest season.*'

Certifications such as Rainforest Alliance and CAFE Practices have strict quality requirements and therefore are not accessible to all producers. These certifications can prompt a sense of pride and community. One Costa Rican cooperative uses its participation in CAFE Practices to build solidarity in the cooperative. A message to producers on the cooperative's website states *'The quality of our coffee [produced in this cooperative] fully complies with the high standards of Starbucks,'* (CooproNaranjo, 2013).

Increasing Inclusion

Certifications, even if they provide little economic incentive, have the potential to increase women's empowerment and sense of identity (Bacon, 2010). Countries where female empowerment is higher are more likely to pursue voluntary certifications (van Kooten, Nelson, & Vertinsky, 2005). However, certification alone is not enough to guarantee the participation and empowerment of women (Lyon, 2008; Lyon, Bezaury, & Mutersbaugh, 2010). Based on our results, we suggest that certification programs and cooperative policies should be inclusive to all members of the community to build social capital in a sustainable way.

We see a direct link between cooperative policy toward inclusion and the participation of women. The policies of Cooperative 1 do not encourage the participation of women because each household, rather than each member, has a vote in assemblies. The policies reflect the management's view of the role of women in the cooperative. The former manager at Cooperative 1 expresses his opinion, '*Fair Trade didn't change the role of women in the cooperative. Women have their own roles in the household and are busy with the kids. They are not too interested in coffee production.'* Female participation is low in this cooperative: eleven percent of the cooperative's members are women. However, overall participation rates of women in coffee production are also low in this area of Costa Rica, and women are more likely to work in the fields than own their own farm. Only 6% of farms owned by women and 22% of women involved in labor in the coffee fields (Instituto Nacional de Estadisticas y Censos, 2007).

Conversely, Cooperative 3 actively encourages the participation of women and offers a training called *Leadership for Women in the Cooperative*. This program began in 2006 with the participation of 70 of the cooperative's 195 female members. Cooperative 3 also encourages the participation of women, particularly at the bi-annual assemblies. The cooperative agronomist explains the decision, *'The kids make noise and annoy the older members, but if we don't allow the kids to come, the mothers have to stay home [to take care of them]. We voted a few years ago to [continue to] allow children at the assemblies*.' Thirty percent of the members of Cooperative 3 are women. Female ownership of coffee farms is also higher in this region, however, with 21% of the coffee farms owned

by women and 9% of the female population of the region involved in labor in the coffee fields (Instituto Nacional de Estadisticas y Censos, 2007).

Harvested by Women, while still a nascent certification scheme, attempts to build female participation and empowerment in the coffee industry (Camacho Sandoval, 2011; International Trade Centre, 2012). According to an administrator at the Alianza de Mujeres en Café (Women's Coffee Alliance), they attempt to do this by increasing the human capital and the self-esteem of female coffee producers. Premiums earned from the certification fund capacity-building projects for women. Cooperative 4 participates in Harvested by Women and uses the certification premium for its Women's Committee, which offers training on empowerment and income-generating projects for women. '*We try to diminish the macho culture in the cooperative*,' a committee member tells us in an interview. The cooperative has 32% female members, higher than the rate of 21% female farmers in the area.

Considering the National Context When Implementing Certification Schemes

Despite the potential for cooperatives and certifications to build social capital, this process is not automatic, and several factors must be considered to realize this potential. The success of certification schemes in terms of the production of social capital, improvement of livelihoods and environmental impact are largely dependent on the nation context into which they are adopted (Elder et al., 2013). External interventions without grassroots support compromise cooperative movements (Enzama, 2013). Any social capital built in cooperative or certification movements can be destroyed by regimes that promote distrust, such as corrupt management (Chloupkova, 2003; Elder et al., 2013). When social capital is low, a vicious cycle can arise with the adoption of certifications. A privileged few rather than the entire community benefit from certifications and inequality is exacerbated (Fraser et al., 2013; Getz, 2008; González & Nigh, 2005).

We consider the example of Uganda, where membership in farmers' organizations is inhibited by low levels of interpersonal trust (Snider et al., 2014). Organizations that do exist are dependent on the support of NGOs and there are very few, if any, horizontal connections between groups. Participation

in these groups does build social capital, but it often strengthens bonding ties more than bridging ties (Snider et al., 2014). Organizations that are isolated with no connection between the groups do not transfer norms and behavior to other groups. This situation would not build, and could possibly reduce trust (Paxton, 2007). Caution should be taken when introducing certifications into this setting. An effort could be made before the introduction of certifications to create horizontal network connections between groups and develop second-level cooperatives, much like Coocafe in Costa Rica or Union of Cooperatives of Coffee Growers (COCOCA) in Burundi (Vandorpe, 2014), which build social and human capital within small cooperatives with the goal of helping these cooperatives access certifications.

Due to state regulation in Costa Rica, certifications are not required for the equitable distribution of profits (Smith, 2007). There is transparency in the distribution of the certification premiums (Snider et al., Submitted for Publication) and transparency builds trust (Rawlins, 2008).

We emphasize that building social capital is, at best, a slow process. Even the most optimistic contend that the construction of social capital is measured in years, if not decades (Colletta & Cullen, 2000; Durston, 1998).

Conclusions

The levels of social capital in this study show only minor differences between the cooperatives, showing that moderately-high levels of both bridging and bonding social capital are common in coffee cooperatives in Costa Rica. Cooperatives have a strong sense of solidarity, reflecting high levels of bonding social capital. Members are able to benefit from the bridging network connections of the cooperative which helps them access new information and services from other organizations. In cooperatives where bonding social capital dominates, a high emphasis is put on the equality of members. These cooperatives choose to certify all members, regardless of the demand for certified coffee. If any incentive is given for participation in certifications, they are in-kind rather than monetary. In cooperatives where bridging social capital prevails, only select members access

certifications. However, in all cases in this study, levels of bonding social capital were high enough to prevent elite members from benefiting at the expense of the rest of the membership. In communities with low levels of bonding social capital, certifications may result in a non-egalitarian distribution of economic incentives.

We found a positive correlation between voluntary participation in Rainforest Alliance certification and generalized trust. In this case, no monetary incentives were provided for participating in the program. No correlation was found between voluntary Utz certification and generalized trust when a small monetary incentive was given to certified individuals. Though sample sizes in this portion of the study are small, it presents some interesting information that warrants further investigation to better manage financial incentives for voluntary environmental programs.

Inclusion in terms of gender is an important consideration in certification schemes. Efforts and policies to include women vary among the cooperatives and have an effect on women's participation rates. Follow-up studies should examine if female participation leads to a virtuous cycle of inclusion and strengthening of social capital in the cooperative.

Certifications have the potential but not the guarantee of building social capital within a cooperative. The national context into which the certification is being inserted must be considered. We observed positive examples in Costa Rican cooperatives where inequality is low and transparency is high. However other authors have documented cases of certifications destroying social capital in cooperatives in other countries. Because of the disparity in national contexts, we suggest a more regional approach to certification standards in which certification bodies foster and verify a certain level of transparency, democracy and accountability before the certification process begins. Capacity building of cooperative administration is recommended before certifications in cooperatives where human capital is low.

Transparency, democracy and accountability within a cooperative are important for certifications to be effective. If these aspects are lacking, certifications may increase inequality and fail to achieve environmental goals.

Chapter 7: Synthesis

Abstract

This chapter provides a synthesis of Chapters 4-6. I first look at how the national context of Costa Rica, including environmental and social regulation, regulation of the coffee industry, and support to the cooperatives sector, and how this context affects how certifications function. Data from this study is compared to literature from other countries. Next I look at how the level of social capital in a country may affect the uptake of certifications. The national context also affects the financial and non-financial benefits of certifications.

The chapter ends with a discussion of the limits of the study and recommendations for policy and future research.

Résumé

Ce chapitre fournit une synthèse des chapitres 4-6. J'analyse d'abord comment le contexte national du Costa Rica affecte le fonctionnement des certifications, en particulier la réglementation environnementale et sociale, la réglementation du secteur du café, et le soutien au secteur des coopératives.

Les données de cette étude sont comparées à des données produites dans d'autres pays. Ensuite, j'analyse comment le niveau de capital social dans un pays peut affecter l'adoption de la certification. Le contexte national influence également les avantages financiers et non-financiers des certifications.

Le chapitre se termine par une discussion sur les limites de l'étude et des recommandations concernant les politiques publiques et de futures recherches.

Resumen

En este capítulo se ofrece una síntesis de los capítulos 4-6. Empiezo con una mirada a cómo es el contexto nacional de Costa Rica, incluyendo la regulación ambiental y social, la regulación de la industria del café, y el apoyo al sector de las cooperativas, y cómo este contexto afecta la forma en función de las certificaciones. Los datos de este estudio se comparan con la literatura de otros países. Luego, miro cómo el nivel de capital social en un país puede afectar a la captación de las

certificaciones. El contexto nacional también afecta a los beneficios financieros y no financieros de certificaciones.

El capítulo termina con una discusión de los límites del estudio y recomendaciones para la política y la investigación futura.

Introduction

This thesis was undertaken to better understand how cooperatives manage voluntary coffee certifications and the certifications' effect on the sustainability of small holder livelihoods. Scientific literature describes discrepancies in the efficacy of certifications but does not fully address the range of certifications available, nor does it adequately analyze the fundamental role of farmers' organizations in the certification process. In the preceding chapters I attempted to identify some aspects of Costa Rica's national context which are important in influencing this efficacy, such as the policy environment and regulation of the coffee industry. I also looked at the interaction between this environment, the cooperatives and the other stakeholders' influence the advisory services which support sustainable agriculture. Finally I looked at the role of social capital in the management of certifications and its effect on equality within the cooperative.

I found that overall, certifications in Costa Rica function in a transparent manner and provide modest but real benefits to producers and their cooperatives. This is because of Costa Rica's context of high regulation and enforcement of environmental and social laws, regulation of the coffee industry and strong support for farmers' organizations.

The synergy between cooperatives and certifications

The view of organizations purely as economically rational actors is of limited use in general (Mintzberg, 1989) and even less applicable to member-owned cooperatives. Cooperatives are companies which must be economically viable, but as member-owned and –controlled entities they are compelled to offer certain benefits to their members and the community (Wennink et al., 2008). This offers an internal driver for cooperatives to adopt certifications (Klerkx et al., 2012). The cooperative values of self-help, self-responsibility, democracy, equality, equity and solidarity (International Co-operative Alliance, 2015) fit well with those of many certification schemes, particularly Fair Trade.

The structure of the coffee sector affects the efficacy and management of certifications

As outlined in Chapter 3, the structure of Costa Rica's coffee sector provides a unique political environment to study certifications. The political and social environments combine to affect the social capital of the coffee sector, as described in Chapter 5. Certifications also benefit from the sustainability discourse in Costa Rica, as discussed in Chapter 6. All of these factors combine to create a national context which affects the efficacy and management of certifications (See Figure 11). This helps us understand some of the management decisions made by cooperatives which were discussed in Chapter 4.

At least three main characteristics of the coffee sector affect how certifications function in Costa Rica: environmental and social regulation and enforcement, Law 2762 which regulates coffee quality and relations between producers and millers, and a strong cooperative sector with institutional support. The following sections will look at each of these aspects more closely.

Environmental and social regulation and enforcement

Costa Rica is considered a leader in environmental legislation (Evans, 2010). Its laws also offer considerable social protection (Rosenberg, 1981). Because of the strict enforcement of environmental regulations, farmers and cooperatives are more prepared to comply with the environmental aspects of certifications. At the cooperative level, Costa Rica passed a law requiring clean technology in mills in 1994 (Castro, 2013), which induced cooperatives to begin upgrades to their mills before many of them were certified. Costa Rican law has prohibited the use of lead arsenate on farms since 1990 (Castro, 2013) and lindane and DDT have been outlawed since 1998 (Ministerio de Agricultura y Ganadería, 1998). These pesticides are also prohibited for all certifications and are not sold at the cooperatives' supply stores, making the transition into certifications easier. Governmental policy that on one hand promotes certification but on the other promotes dependence on agrochemicals, such as Rwanda's policy of subsidizing agrochemicals, can undermine the impact of certifications (Elder et al., 2013). Costa Rica's environmental policy does offer some mixed messages, however. In 2014, in the effort to combat an outbreak of coffee rust

(*Hemileia vastatrix),* coffee cooperatives reported that Costa Rica's Ministry of Agriculture distributed free fungicides to farmers. While these fungicides complied with certification standards (except for those of organic agriculture), and this was considered an emergency measure (unlike Rwanda's permanent subsidy policy) this policy does not provide any incentive to explore cultural measures of disease prevention.

The enforcement of Costa Rica's legislation not only facilitates the adoption of standards, but contributes to the discourse of sustainability of which certifications are a part. Public awareness in Costa Rica about environmental issues such as deforestation, climate change and biodiversity is quite high, thanks the discourse on these topics on the academic, institutional, professional and mass media levels (J.-F. Le Coq, Froger, Pesche, Legrand, & Saenz, 2015). The institutional environment in Costa Rica is quite active in the sustainability discourse (Nygren, 1998), and environmental NGOs play an important role in education and governance of environmental issues (Tahkokallio & Nygren, 2008).

This sustainability discourse is apparent in Costa Rica, as one is constantly confronted with publicity from various sources which remind the public to plant trees, protect the water, etc. Farmers in the focus group discussions and interviews displayed an understanding of the environmental implications of farming practices. For example, when participants of a focus group were asked about the benefits of planting shade trees in the coffee fields they listed maintaining soil fertility, erosion control, wildlife habitat and carbon sequestration. Farmers also stated that they received information on farming practices from multiple sources including MAG, Icafe and INA.

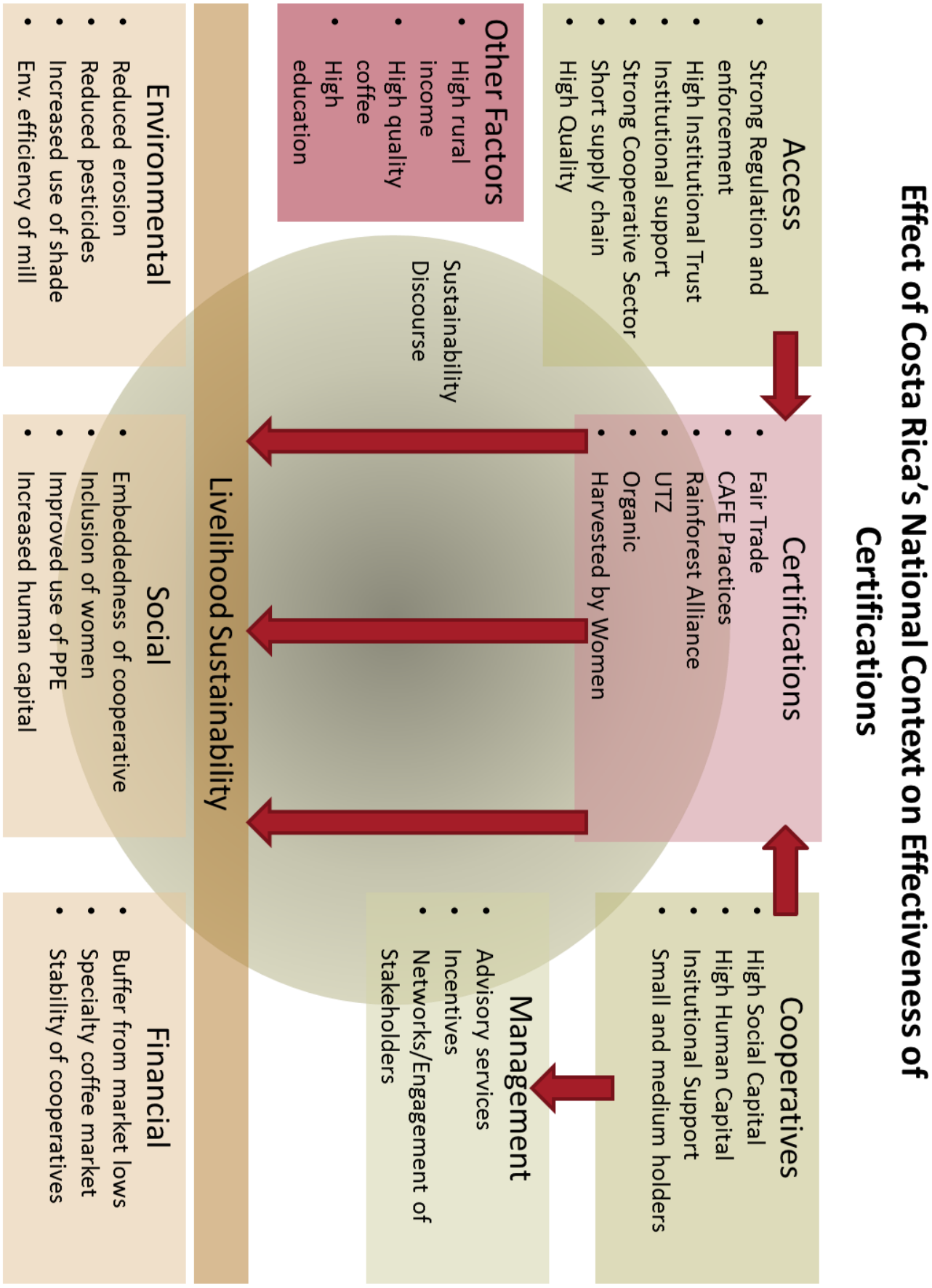

Figure 11 : Effect of Costa Rica's National Context on Efficacy of Certifications

The regulation and enforcement of social laws also reduce farm level changes with certification. Fair Trade, Rainforest Alliance and CAFE Practices certifications require that producers pay the state-required minimum wage to field workers. The minimum wage is generally respected in Costa Rica, so little change was seen when certifications were employed. The former manager at one of the Coocafe-founding cooperatives says '*The wages of the workers did not increase [with Fair Trade] because they were already earning the minimum wage*.' This contrasts with a study of Uganda that found that wage laborers for Fair Trade certified organizations had lower wages than those for non-Fair Trade certified organizations (Cramer et al., 2014)

One could argue that Fair Trade certification is not intended for upper-middle-income (as defined by World Bank (2016)) countries like Costa Rica in which the state provides considerable oversight in environmental and social issues and the concrete changes prompted by certification are small. This would be overlooking the considerable progress that Fair Trade certification has induced in Costa Rica since the late 1980s, particularly in the small cooperatives in Guanacaste and Coto Brus (Luetchford, 2008). The different realities of cooperatives in the Valleys versus the cooperatives in Guanacaste and Coto Brus due to human resources and human capital were apparent from the interviews. The larger cooperatives in the Valleys have a larger staff and manage their own sales and exportation. The managers often have advanced degrees in business. The smaller cooperatives rely heavily on Coocafe for management of contracts and were sometimes unclear about the terms of the contracts, calling on managers at Coocafe when clarification was needed. Because of the small size of the cooperatives, the cooperative agronomist may also serve as manager.

Fair Trade continues to provide funds for services needed by the Guanacaste and Coto Brus cooperatives. On the other hand, two of the cooperatives in the Valleys and Tarrazú have transitioned out of Fair Trade to focus more on CAFE Practices and Rainforest Alliance. Some cooperatives acknowledge that participation in Fair Trade is not beneficial to them. A manager for a Type 4 cooperative told me '*We comply with much more than Fair Trade asks for, but the costs are too high compared to the sales*.' This cooperative participates heavily in CAFE Practices and

Rainforest Alliance as well as the direct sale of estate coffee, so the benefits of Fair Trade are less interesting. This suggests that as capacity is developed within cooperatives, the cooperatives may move on to other certifications which are available to them (depending on their coffee quality, flavor profile, etc.), possibly discontinuing Fair Trade certification if market demand for the certification is low. In this way, cooperatives in other countries could move into Fair Trade certification to fill this void in supply.

Law 2762: regulating coffee quality and relations between producers and millers

The second aspect of Costa Rica's coffee sector that facilitates access to certification is Law 2762 and its predecessors. This law and its addendums strictly regulate the quality of coffee delivered to mills. The law prohibits the production of *robusta* varieties of coffee and certain cultivars of *arabica* which are considered as a threat to Costa Rica's reputation as a producer of high quality coffee. The amount of green, or unripe, coffee cherries is limited to 2%. The law also dictates that all coffee must be processed by a certified mill within 24 hours of harvest (Icafe, 1961). This enforcement prepares cooperatives for the standards of certification and offers an external coercive driver to implement best management practices (Klerkx et al., 2012). This can be contrasted with other coffee value chains, such as that of Tanzania. Smallholder farmers in Tanzania are responsible for pulping, washing, drying and sorting of coffee cherries after harvest. Variations in this stage of processing strongly affect the quality of coffee and are responsible for a decline in the quality of Tanzanian coffee (Parrish, Luzadis, & Bentley, 2005). In the case of Tanzanian coffee, access to Fair Trade markets required an upgrade in coffee quality. The same was found in Nicaragua, where there is less governmental intervention in quality controls (Pirotte et al., 2006; Valkila & Nygren, 2010).

In Costa Rica, all export-quality coffee meets Fair Trade standards. In fact, many of the small Fair Trade cooperatives do not have the capacity to separate the harvest based on quality, so the entire harvest is of uniform quality, whether it is for Fair Trade or conventional markets. Cooperatives with Utz certification also stated that there was no quality upgrade needed to access certification. Two of the farmers interviewed said that they needed to upgrade their harvesting practices for Rainforest

Alliance certification. They said that only 100% ripe coffee is accepted for this certification so they must pay harvesters a higher wage because the harvesting process is slower. One cooperative stated that CAFE Practices certification compelled them to more strictly enforce the Icafe regulation that mills cannot accept a delivery that contains more that 2% unripe beans. Overall, upgrades to the quality of the harvest were minor compared to those described in the literature from other countries (Parrish et al., 2005; Valkila & Nygren, 2010).

Law 2862 also ensures an equitable distribution of profits which support small and medium-holder farmers. The distribution of the profits is transparent and the profit retained by mills is limited to 9% for the FOB price (Icafe, 1961). We can compare this to the Kenyan coffee sector, which is also dominated by small farmers organized in cooperatives (Sibelet & Montzieux, 2012). However, the supply chain is much longer in Kenya and rife with corruption (Mureithi, 2008; Sibelet & Montzieux, 2012). In Kenya small holders sell either to the informal market, or to a cooperative. The harvest is then sold to a miller, who sells to a marketing agent who sells the harvest at the auction where it is sold to an exporter. Each level of the supply chain demands a share of the profit. The result is that the small holder in Kenya receives only 58% of the free on board sale price (Mureithi, 2008). This dilutes the financial incentives that farmers or cooperatives may receive for certifications because presumably each level of the supply chain would take a cut of any price premium as they do of the base price. In Costa Rica Icafe monitors all contracts. A manager of a small Type 2 cooperative says '*We could not make a contract that was below the NYSE price. Icafe would not accept the contract*.'

Strong Cooperative Sector and Institutional Support

The third factor that influences certifications is the considerable support that state and non-governmental organizations offer to cooperatives and other farmers' organizations which support small and medium-holder farmers. We can compare this with Tanzania. While there is organizational support for the Tanzanian coffee industry, it does not adequately provide access to certifications (Lazaro et al., 2008). There is some support from NGOs such as Solidaridad, but support seems limited to technical training of farmers and overlooks human capital development in the

cooperatives (Verkaart, 2009). For this reason, Utz certification in Tanzania is mainly found on large estates (Lazaro et al., 2008) and small holder cooperatives have problems with attrition of farmers from the program (Verkaart, 2009). This seems to be due to a lack of capital, particularly human and financial (Lazaro et al., 2008). In Costa Rica, cooperatives and supporting NGOs and state organizations (such as INA, Icafe, CATIE and Earthwatch working through the cooperatives) fill this gap by providing capacity-building in cooperative staff and in members. When Fair Trade certification was first considered in Costa Rica, it was found that human capital was lacking in the cooperatives targeted for certification (small cooperatives in Guanacaste). The Agro-Economic Consultancy (CAE), in cooperation with a German NGO, began by building capacity in the cooperative staff which was essential in the formation of the Coocafe consortium (Luetchford, 2008). Coocafe continues to provide a myriad of services which build capacity in cooperative staff and members. '*I just attended training at Coocafe. We learned how to complete the [Fair Trade] paperwork and upload our documents using Dropbox*,' a Type 1 cooperative employee explained. Coocafe staff also offer mock-audits for cooperatives and cooperative members to help them prepare for FLO audits. Coocafe secures and manages contracts for the majority of the member cooperatives (two Type 2 cooperatives which produce high quality coffee secure all or a portion of their own contracts which are then passed to Coocafe for export services). Consortia facilitate access to certifications in other countries as well. The *Consortium des Coopératives des Caféculteurs* (Cococa) in Burundi (Vandorpe, 2014) and PRODECOOP in Nicaragua (Ruben & Zuñiga, 2011) have been helpful in facilitating access to Fair Trade and, in some cases organic certification. An (unnamed) consortium of cooperatives in Guatemala gives member cooperative access to Utz certification (Renard, 2005).

Support for cooperatives is not limited to consortium and NGO support. Governmental organizations such as Infocoop provide financing to cooperatives in need of credit. The manager of one struggling Type 1 cooperative says '*We exist by the grace of Coocafe and Infocoop. They do not like to see member cooperatives fail.*'

Social Capital in Costa Rica

The study of social capital is very relevant to farmers' organizations and voluntary certification. Organizations which adhere to a set of norms can reduce the costs of monitoring and sanctioning members who exploit natural resources (Ostrom, 1990). Monitoring costs can be significant in certification, and non-compliant members raise the costs by necessitating re-auditing.

Distrust can inhibit farmers' participation in organizations and can limit the organizations' effectiveness in distributing profits and promoting sustainable practices (Snider et al., 2014)[1]. Distrust can also affect the equity of supply chain contracts (Sartorius & Kirsten, 2007).

Putnam's proxy uses participation in voluntary organizations as a proxy for social capital (Putnam et al., 1994). Based on Putnam's proxy and the active participation in cooperatives and other producers' organizations, we would expect to find high levels of bridging social capital in Costa Rica. However, Costa Rica has some of the lowest levels of generalized trust in Latin America. On average over the past 20 years, only 10.5% of Costa Ricans responded that, in general one can trust most people (See Table 19). This is below the Latin American average of 17% (NB: Table 19 does not include all Latin American countries, therefore the average is different). Only Brazil has a lower proportion of trust (7.4%) (Latinobarómetro, 2015a). About 20% of the respondents in the social capital survey detailed in Chapter 6 responded that, in general, one can trust others. However, unlike the Latino Barometer data, this was not a cross-section of the population. All respondents were from rural areas, which in Costa Rica have higher levels of generalized trust (Collado, 2007). All respondents are also participants in at least one voluntary organization (the cooperative) which, in itself is an indicator of bridging social capital (Putnam et al., 1994).

I attribute this discrepancy (high participation in voluntary organizations yet low levels of interpersonal trust) to Costa Rica's political environment of strong regulation and enforcement of laws described above. Legal enforcement compensates for low levels of interpersonal trust (Frey & Jegen, 1999). Interpersonal trust is replaced by institutional trust when people trust others to comply

Table 19 Interpersonal trust in Latin American coffee-producing countries. Source (Latinobarómetro, 2015b).

	Country of Study									
	Total	Brazil	Colombia	Costa Rica	El Salvador	Guatemala	Honduras	Mexico	Nicaragua	Panama
One can trust the majority of people	15,10%	7,40%	16,70%	10,50%	17,20%	16,00%	14,70%	16,00%	16,20%	22,40%
One cannot be too careful when dealing with others	82,00%	91,60%	82,50%	86,50%	77,70%	81,30%	79,20%	83,20%	81,40%	71,30%
Don't know	3,00%	1,00%	0,80%	3,00%	5,10%	2,70%	6,10%	0,80%	2,40%	6,30%

Table 20 Trust in judicial power in Latin American coffee-producing countries. Source (Latinobarómetro, 2015b).

	Country of Study									
How much confidence do you have in judicial power?	Total	Brazil	Colombia	Costa Rica	El Salvador	Guatemala	Honduras	Mexico	Nicaragua	Panama
A lot	7,30%	5,60%	4,30%	16,30%	5,80%	8,20%	4,90%	4,70%	11,90%	6,00%
Somewhat	19,90%	26,10%	18,50%	27,20%	10,00%	14,90%	17,60%	19,20%	22,50%	22,50%
A little	34,90%	38,50%	38,50%	26,00%	38,30%	41,70%	25,70%	35,80%	32,60%	35,70%
Not at all	33,30%	25,40%	35,60%	27,40%	42,50%	28,20%	46,70%	38,00%	27,10%	29,50%
No response	0,70%	0,20%	0,60%	0,40%	0,80%	0,70%	1,00%	0,20%	0,80%	1,40%
Don't know	3,80%	4,20%	2,50%	2,70%	2,70%	6,30%	4,20%	2,10%	5,20%	4,90%
N	(9.650)	(1.250)	(1.200)	(1.000)	(1.000)	(1.000)	(1.000)	(1.200)	(1.000)	(1.000)

because of strict enforcement rather than because they are personally compelled to uphold the norms of society. Indeed, Costa Rica ranks above average (43.5% confidence [a lot plus somewhat] in Costa Rica versus the Latin American average of 27.2% confidence) in confidence in judicial power (Latinobarómetro, 2015b) (Table 20).

Unfortunately Afrobarometer does not collect the same data as Latino Barometer, so we cannot directly compare Latin America and Africa on these dimensions. However, generalized trust is generally considered to be low in Africa (Nunn & Wantchekon, 2011). The density of farmers' organizations in Uganda also seems to contradict Putnam's proxy. In this case, however, it seems to be from the external support of funding organizations which make participation rates artificially high (Snider et al., 2014). External support does not make up for the lack of trust in Uganda, as governmental regulation compensates for lack of trust in Costa Rica, and the institutions remain weak. Uganda's cooperative sector largely succumbed to political interference and mismanagement in the 1980s (Bigirwa, 2005). Kenya's cooperative sector is also rife with corruption and mismanagement (Sibelet & Montzieux, 2012) and corruption and distrust in the cooperative sector has been documented in Rwanda (Elder et al., 2012) and Tanzania (Bibby, 2006).

Environmental problems such as deforestation are exacerbated by weak institutions in Sub-Saharan Africa (Bhattarai & Hammig, 2001). Certifications would seem to be a good strategy to promote natural resource management, since they can act as a form of governance when state enforcement of laws or when the laws themselves are weak (Auld, 2010).

Nevertheless there has been slow uptake of certifications in Africa. In 2010, 82% of Fair Trade-certified organizations were located in Latin America, compared to only 12% in Africa (Auld, 2010). In Africa, only Ethiopia has managed to capture a significant share of the certified organic coffee market (Potts et al., 2014). Tanzania is the only African country that produces a significant amount of Fair Trade compliant coffee (43% of national production) (Potts et al., 2014). Normal rules of incentives on which certifications are based do not apply in fragile or corrupt states (Karsenty & Ongolo, 2012).

Organizational and management issues are obstacles to certification (Luetchford, 2008; Vandorpe, 2014). When social capital is low, cooperatives have difficulty managing certifications and trust can be further destroyed, causing a vicious cycle of lost social capital (Fraser et al., 2013; Getz, 2008; González & Nigh, 2005).

The national context of Costa Rica, though not without its problems of corruption and mistrust, provides an environment conducive to certifications. The benefits that cooperatives realize from certifications are both financial and non-financial. The two types are discussed below.

Financial benefits of certification

Certification premiums are variable and poorly incentivize farmers

Cooperatives list various reasons to pursue certifications, including complying with the request of an important buyer or entering new markets (See Chapter 4). Financial motivations are the most important consideration, particularly for Fair Trade certification. Nevertheless, researchers have criticized certifications as financially unviable due to low demand (Sick, 2008) because standard-compliant coffee must be sold as conventional. It is true that the supply of standard-compliant coffee far outweighs the demand. Globally 25% of certification-compliant production is sold as certified coffee (Potts et al., 2014). Costa Rican coffee cooperatives do a better-than-average job of matching certified production to certified sales by focusing on more selective certifications like CAFE Practices and Rainforest Alliance. A large part of the oversupply on the global level is due to the oversupply of 4C certified coffee, due to its low barriers to entry. When 4C certification is excluded from global averages, the proportion of production to sales becomes 56%, closer to Costa Rica's proportion of 53% for Utz, 55% for CAFE Practices and 58% for Rainforest Alliance.

Many have criticized Fair Trade for not having a significant impact on household earnings (Beuchelt & Zeller, 2011; Johannessen & Wilhite, 2010; van Rijsbergen, Elbers, Ruben, & Njuguna, 2016). On the other hand, some criticize cooperatives for retaining the Fair Trade social premium, claiming that supporting cooperatives does not reduce farmer poverty (Haight, 2011). We can see from the example below why cooperatives may choose to do this. As Weber (2011) points out, '*small or zero*

net premiums do not necessarily imply that certification programs are unimportant to coffee growing households, communities or consumers.'

The financial incentives for voluntary coffee certifications are weak and variable. However, even though market demand is low and management costs are high, in times of low world price of coffee, cooperatives are often able to earn a significant amount from Fair Trade, organic and Utz certifications. When the world price of coffee is high, this premium may disappear. Even though the financial benefit at both the cooperative and farm level may be absent in years when the world price of coffee is high, cooperatives find that the certification provides a buffer against the lows of a volatile market. The former manager of a Coocafe founding-member cooperative explains '*Fair Trade gave us the possibility to survive when the price of coffee was low*.' This protection from market lows lends some financial stability to coffee farming.

It is true, however, that even when there is a certification premium, the effect on household incomes is often negligible, particularly in a middle-income country like Costa Rica. To understand the differential impact of certification premium on cooperative and household income we can look first at the example of Fair Trade. This illustrates why cooperatives choose different strategies to distribute the premiums. We can revisit in more detail the discussion presented in Chapter 4 and consider the case of a large Type 3 cooperative in Coto Brus and a small Type 2 cooperative in Tarrazú. Both cooperatives sold approximately the same volume of coffee with Fair Trade certification in 2012/2013, but used different strategies to distribute the premium.

In 2013 the Coto Brus cooperative paid approximately $4140 in Fair Trade certification fees, but was able to sell only 8% of its total harvest to Fair Trade markets. However, this was still a profitable venture for the cooperative, since the $20/quintal social premium alone totaled $232,000 (Since 2013 was a year of low coffee prices, the cooperative likely also benefited from the Fair Trade minimum price, but this would vary by the terms of each contract). Had this premium been divided equally among all members, each member would receive a payment of less than $40. For this reason,

the cooperative members voted to use the premium to fund a reforestation program. Members received free shade tree seedlings to plant on their farms. The goals of the reforestation program were to reduce erosion, protect soil fertility and increase coffee bean quality. In this way the premium has the potential to make a community-level impact rather than a farm-level impact.

On the other hand, we can consider the example of a small Type 2 cooperative in Tarrazú. The cooperative pays $1/quintal of coffee exported in fees to Coocafe to be included in their Fair Trade certification. However, the cooperative receives $20/quintal for the Fair Trade premium. In 2013 the cooperative sold 60% of its harvest (11,580 quintals) in Fair Trade contracts. This amounts to $231,600 in premiums and $11,580 in fees. The cooperative passes 75% of the premium on to the members in the form of a direct payment, which amounts to an average of approximately $270/member (the payment is pro-rated by the amount of coffee the member sells to the cooperative). As stated in Chapter 4, the average rural income in Costa Rica is $862/month (Censos, 2012), so a $270 payment for the year is not significant. This confirms the criticism of low impact on household income. However Leon Cortez, the canton where this cooperative is located, is one of the poorest in the country, and the cooperative feels it has an obligation to the members to increase the profitability of coffee farming. As the agronomist said in an interview, '*as a business we think it is important that this money goes directly to the producer*.' The members also benefit from the 25% of the premium that is retained by the cooperative. This portion of the premium is used for educational programs to improve production practices and coffee quality.

Fair Trade certification is an extreme example, because 100% of the cooperative's members must be certified and the premium must be distributed in an equitable way. Other certifications do not have this rule and, therefore, widespread farm-level impacts are possible (though not guaranteed). Globally, only 26% of Utz-compliant coffee is sold as such (Potts et al., 2014). We can look at the example of a large Type 4 cooperative with Utz certification. In the 2012/2013 harvest the cooperative sold 3210 quintals with Utz certification and the cooperative reports a premium of 5 cents/pound ($5/quintal). This amounts to a total premium of $16,050 which easily covers the

auditing costs of $3,332 that the cooperative paid that year for Utz certification. If this premium, after auditing costs are subtracted, was divided among the 2100 members of the cooperative, each member would receive an average of approximately $6.00. If other related costs of additional training, site visits and support were deducted, the per-member distribution would be nearly zero (although members would still benefit from the additional services related to certification and the enhanced management practices required by Utz certification). This cooperative chooses an entrepreneurial approach, certifying only 15 of its members' farms. Most of these farms are large and the members have already demonstrated good management practices and a loyalty to the cooperative. The cooperative chooses to pass the 5 cents/pound premium directly to the certified members (without deducting auditing costs) to reward good management practices and offset the upgrades that were needed to comply with certification. These 15 certified farmers receive an average of $1070 in premiums for their harvest. The cooperative has found that this amount encourages farmers to become certified. The following year, when the NYSE price was higher and the Utz premium was lower, the cooperative did not sell any coffee with Utz certification and the certified members did not receive a premium.

A small Type 2 cooperative acknowledges that individual certifications could generate benefits for certain farmers, but this goes against its cooperative philosophy. '*The message we want to send to our members is that everyone is equal*,' says the cooperative agronomist. This cooperative chooses to manage its CAFÉ Practices certification collectively and distribute profits to all members. The cooperative sold 30% of the harvest, or 5790 quintals with CAFÉ Practices certification in 2012/2013 and paid $4000 in auditing costs. The cooperative states that there was no premium for CAFÉ Practices that year, classifying the $30/quintal that they received over they NYSE price as a quality premium. Any profits earned are returned to all members equally in the final sale price of coffee.

Non-financial benefits of certifications

Existing literature has criticized certifications for small effects on the sustainability of farming practices (Allen Blackman & Rivera, 2010). However, the structure of the certified coffee industry,

including low market demand for certified product, weak and variable pricing incentives and high auditing and management costs incentivized cooperatives to certify only a portion of their most compliant members. This may include farmers who already comply with the majority of certification standards or those with the largest farms. The result is that certifications are mostly used to reward progressive farmers rather than engendering widespread improvements in the sustainability of farming practices. However, there are more indirect benefits to certification.

Promoting a holistic approach to coffee production

As demonstrated in Chapter 5, certifications incite cooperatives to develop a more holistic approach to small-holder coffee farming. They do this indirectly by influencing the advisory services that cooperatives provide to their members. Before certifications, cooperative advisory services were dependent on the training and knowledge of one or more agronomists employed by the cooperative. Certification standards require that members receive training (Ruben & Zuñiga, 2011) on subjects that may be outside the expertise of the agronomists, such as training on adaptation to climate change, integrated pest management or employer-labor relations. This requirement obliges cooperatives to form or renegotiate relationships with outside organizations to acquire access to new knowledge and techniques (Alvarez et al., 2010; Bitzer et al., 2008). These new services and knowledge add to the existing discourse about sustainability in the cooperative and in the community. This discourse is also influenced by governmental regulation of the coffee industry and other stakeholders in the community as discussed above.

The holistic approach to coffee production better supports sustainable agriculture than the previous approach of focusing on inputs and outputs. It encourages producers to consider allowing a certain threshold of pests on their crop and encourages soil management for the long-term fertility of soils. Shade trees, while they may lower short-term productivity, protect soils and improve bean quality (Vaast et al., 2006). These changes in perceptions about farming practices take time and are not easily quantified, particularly in the short term.

Increased human and social capital

To provide a more holistic approach to coffee production, an increase in human capital was needed. All case-study cooperatives stated that both group and individual advisory services increased with certification. Cooperative administrators receive business and technical training from NGOs, consortia and governmental agencies and members receive technical training from cooperative staff and other stakeholders. The result is a more efficiently-run cooperative which builds trust in the administration and greater farmer knowledge about sustainable production practices.

This increase in interaction between cooperative administration and members increases social capital. Members interact with other members at cooperative training events, lectures and field days and strengthen bonding social capital. They also interact more regularly with cooperative administration, building trust which facilitates employing new agricultural practices (Klerkx & Proctor, 2013).

Balancing financial incentives with member equality

I found that individual certifications may increase the inequality within a cooperative. Cooperatives focus limited resources, such as farm visits and plant material, on certified farmers. This creates a difficult situation for the cooperative, as it contradicts the principles of cooperative organizations in which all members have an equal stake in the organization. Previous research warns that high levels of inequality and exclusion can destroy a cooperative (Fraser et al., 2013; González & Nigh, 2005). However, making changes to agricultural practices to comply with certification may present significant costs to producers (for example building a pesticide storage shed, increased labor costs for manual weeding and integrated pest management, purchase and labor costs for using compost), and producers often require at least a portion of these costs to be covered by a higher sale price.

Some Costa Rican cooperatives address this conundrum by focusing services on certified farmers but distributing financial benefits to both certified and uncertified farmers. This dilutes incentives for individually-certified farmers but maintains harmony within the cooperative.

Cooperatives with a high sense of solidarity (high bonding social capital) may completely reject individual certifications. They feel that equality among the members is of the highest importance and may make management decisions that, to the outsider, appear to be counter-productive to the financial profitability of the cooperative, just to maintain this equality. If this sense of solidarity is not shared by the membership, these policies may result in members leaving the cooperative or side-selling to private mills to receive a higher price for specialty coffee.

As demonstrated in Chapter 6, the level of social capital of the organization as a strong effect on the policies of the cooperative which in turn affect the social capital of the membership. There is extensive literature on the social capital of groups and communities, less on the social capital of organizations (Cohen & Prusak, 2001) but the interaction between social capital at the two levels is virtually unstudied. The leadership in an organization is vital to consider because the strategies and policies a leader employs shape the character and the social structure of an organization (Mintzberg, 2009) which can build or destroy social capital.

Balancing extrinsic and intrinsic motivations

Considering that financial incentives are weak and variable while certification costs are high, one might wonder why cooperatives and individuals pursue certifications.

In Chapter 6 we see that individuals with high social capital (as measured by generalized trust) are more likely to pursue a certification, in this case Rainforest Alliance, for environmental motivations, even if no financial incentive is provided. Generalized trust reflects '*belief in the benevolence of human nature*,' (Yamagishi & Yamagishi, 1994). In the case of certifications, this benevolence is manifested in the protection of soil, wildlife habitats, and water resources. People with high levels of generalized trust are willing to voluntarily comply with standards because they believe that others will do so as well. These individuals have intrinsic motivations to certify, and have internalized the social norms of certification (Flora et al., 2015). This is demonstrated by a small-holder farmer converting to Rainforest Alliance certification who explains '[*The certification] is not for me but for the birds and the animals that live in the coffee field.*'

There is also evidence of internalization of the norms of certification at the cooperative level. I observed a difference in the compliance of the different cooperatives with Fair Trade certification. In comparing Cooperative 3 (from Chapter 4), a small Guanacaste cooperative and Cooperative 19 (also from Chapter 4), a large Tarrazú cooperative, we can see differences in the efforts made to improve the sustainability of the cooperative mill. While both cooperatives comply with the standard, Cooperative 19 has gone beyond the requirements by developing a sustainability program which includes efforts to use only renewable energy, including solar. A manager says '*We have a commitment to sustainable production, to protect the environment, to satisfy the expectations of the clients and improve the quality of life of their members and the community in general*.' This displays responsible leadership which is both an indicator of high social capital in the administration and a means to build social capital within the organization (Maak, 2007). Cooperative 19 appears to be a more mature group in the transformation of its social and human capital as described by Pretty and Ward (2001). The cooperative has reached Stage Two in Pretty's transformation of capital in which organizations develop their own rules and norms.

Cooperative 3 seems to still be in Stage 1 in the development of its social and human capital. At this stage organizations simply react to the requirements imposed by external agencies (Pretty & Ward, 2001). The manager from Cooperative 3 never mentions sustainability in the interviews. These two cooperatives are, of course, very different and many of the differences come from the size of the cooperatives and the different economic reality for the two due to the demand for the quality of the coffee produced and the cooperatives' financial capital. However, there seems to also be a difference in the intrinsic motivations for certifying. While the manager at Cooperative 19 emphasizes that certifications are a means to achieve the cooperative's sustainability goals, the manager at Cooperative 3 does not seem to see this value. When asked about non-financial benefits of certification, he was unable to mention any. When pressed further he admitted, '*Perhaps the members are better at keeping records*.' However, he did not see certifications as a vehicle to induce greater changes. This may account for some of the discrepancies between studies which have found

that certifications induce large changes at the cooperative level (Ronchi, 2002) and those which have found little change (van Rijsbergen et al., 2016).

This presents interesting questions for future research about how best to manage certifications, both in situations where social capital is low and in situations where it is high. While there seems to be a link between intrinsic motivations for voluntary activities (Degli Antoni, 2009), research has not fully explored this link. Economic theory, which does not consider intrinsic motivations for undertaking an activity such as voluntary certification, would suggest that economic incentives are not needed if the supply of certified coffee (the number of farmers volunteering for certification) meets the cooperative's demand (the amount of certified coffee the cooperative has contracts for) (Frey & Jegen, 1999). Sociological theory, however, which considers an individual's intrinsic motivations for undertaking an activity, such as the belief that something is the 'right thing to do,' suggests that the payment of a premium for voluntary certification would reward intrinsic motivations and improve performance (Flora et al., 2015; Frey & Jegen, 1999). Nevertheless, there is a lack of research on the effect of certification premiums on the construction of social capital. Before making recommendations about how to incentivize individuals to pursue certifications we need to better understand if paid participation in certification schemes inhibits or increases the production of social capital. In areas of low social capital, paid participation may be the only option for cooperatives who wish to encourage compliance with certification standards. However, the premiums for certification rarely cover the farm-level changes needed to comply with standards. A combination of financial incentives and intrinsic motivations (high social capital) may result in the most sustainable changes at the farm level.

Limits of the study

While every effort was made to accurately portray the situation in Costa Rican coffee cooperatives, there are limits to the study. The first limit is that of national context. This thesis was undertaken to study the context of certifications in Costa Rica in order to apply that information to the situation in other countries. However, with the exception of a short field project in Uganda[1], primary data was

only collected in Costa Rica. I have made an attempt to use secondary data from the literature to compare the situation in Costa Rica to that of other countries. While the conclusions drawn from this study are only applicable to Costa Rica, I hope that policy recommendations drawn from this study can help improve the efficacy of certification in other countries.

The second limitation is equilibrium between qualitative and quantitative data. This is in part due to the lack of available records in the cooperative, for example training records. For this reason I had to rely heavily on qualitative data from interviews. In no cases were training records available from before certification. While the availability of training records improved with certification, one cooperative was only able (or perhaps only willing) to give me the training records for the current year. I compensated for this by triangulating changes in advisory services with members, agronomists and managers. I have no doubt that advisory services are more intensive and diverse because of certifications – there is unanimous and unsolicited confirmation of this from every administrator interviewed. Unfortunately the changes in intensity and scope are impossible to quantify.

The time limits were a constraint for collecting quantitative data from the social capital surveys. The number of surveys that I felt was realistic to complete in the available time was divided in proportion to the number members in each cooperative. The result was that I could survey fewer than 2% of the members of the cooperatives. The logistics of efficiently finding members to interview in the more geographically disperse cooperatives resulted in my surveying fewer members than originally anticipated. However, the consistency of the results of the surveys gives confidence that more surveys would not have significantly changed the results. In fact, the two cooperatives in Los Santos have the same elliptical regression, suggesting consistency in the cooperatives which overlap geographically and only small differences with other more distant cooperatives.

One month was scheduled to live in and collect data in each case study cooperative. While this proved sufficient for the smaller cooperatives, it was a limitation for the large cooperatives. The large cooperatives offer more programs and services and the management is less centralized, requiring

interviews with multiple agronomists and managers. However, these managers and agronomists respond quickly to emails and phone calls, and when information was missing or needed clarification is was available.

A final limitation is that the majority of the data was collected at the cooperative level. The focus of the study is the role of farmers' organizations in the management of voluntary certifications, and so this study relies heavily on interviews with cooperative administrators. However, the analysis would have benefitted from more data regarding changes and perceptions at the farm level. Collecting this data is time-consuming and as with all interviews that rely on participants recalling past events, participants may have difficulty remembering when they changed farming practices. I attempted to minimize this limitation by linking changes in farming practices with locally relevant events (the hiring of the current cooperative agronomist, the certification of their farm, etc.). Also, farm-level data was only collected in interview form. It did not include visits to the farm to assess the farming practices.

Recommendations

I recommend that public policy focus on strengthening farmers' organizations. Farmers' organizations benefit from higher levels of human capital including training in management, internal control and professionalism. We can see the effect that consortia have had on helping cooperatives access certifications by building capacity in cooperatives' staff members. Certifications can place a considerable strain on the resources of small cooperatives. Additional support should be considered for farmers' organizations, particularly in areas where NGOs and other supporting stakeholders are not abundant. In addition to capacity building among staff, this support could be in the form of advisory services which promote sustainable practices to farmers or provision of materials such as shade trees or disease-resistant plant material.

While certifications may compensate for situations in which governance is weak, they are most effective when they are complemented by well-enforced environmental and social policy. Well-enforced environmental and social laws not only facilitate access to certifications, the enforcement

may compensate for low levels of interpersonal trust within a country, which enhances the function of certifications.

Because the unique policy and social environment of a country can affect the function of certifications, certification bodies should take a more regional approach to the design and implementation of certifications. In areas where environmental and social regulation or enforcement of these regulations is weak, special care must be taken. This may include extra support to farmers' organizations who wish to pursue certification or collaboration with NGOs or other organizations to upgrade compliance. Fairtrade International considers producers' access to support before adding countries to their list of accepted producers. Therefore, in countries with limited access to support, other certifying organizations may consider Fair Trade as a prerequisite to further certification.

Certifications should only be employed in farmers' organizations with adequate levels of organizational social capital. Certifications may augment inequality and distrust if they are not properly managed. If social capital is lacking within the organization, efforts should be made to increase social capital before the implementation of certifications. This may include addressing issues of corruption or exclusion of certain social or ethnic groups. The social capital of the organization has a stronger effect on the efficacy and inclusiveness of certifications than does the social capital of the membership. A well-managed and transparent certification scheme can build social capital within the membership.

I recommend that future research regarding the impact of certifications focuses more on farmers' organizations. Some previous studies have concluded that farmers do not benefit financially from certification. I have shown that, while there may be a premium associated with certified coffee, if divided among all of the members of the cooperative, the premium may be insignificant, particularly in medium-income countries such as Costa Rica. Premiums distributed only to individually-certified members may promote inequality in the cooperative. Therefore, future research should explore

more deeply how the financial and non-financial benefits of certifications strengthen farmers' organizations and indirectly benefit farmers.

I also feel that the roles that social capital, particularly interpersonal trust, plays in an individual's decision to pursue certification deserves further study. I have found preliminary evidence that people with higher levels of interpersonal trust are more likely to voluntarily pursue Rainforest Alliance certification when no financial incentive is offered. However, no link was found between interpersonal trust and Utz certification. Further research is needed to determine if this is because of the difference in focus of the two certifications (environmental and social focus of Rainforest Alliance versus the management and traceability focus of Utz) or because of the financial incentive provided. Determining the role of social capital in this decision would be useful in designing incentive policies for certifications. Cooperatives may also find that building social capital within the cooperative is complimentary to their certification program.

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[1] This conference communication (Snider 2014) is a result of the author's participation in the AgTraIn/ARI (Agriculture and Rural Innovation) field methods class in Nnindye, Uganda. It was presented as a poster at the 2014 Tropentag Conference in Prague, Czech Republic. It is included as Appendix F.

Chapter 8:

Conclusions

Abstract

This thesis was undertaken to answer the question *What is the role of Costa Rican cooperatives in the management of voluntary coffee certifications?* It has demonstrated that cooperatives play an important role by facilitating small farmer access to certifications, acting as an intermediary between other stakeholders to provide more intensive advisory services to members and make important decisions regarding how to balance the financial incentives for certification with the solidarity within the cooperative.

It next examined how certifications change advisory services in the cooperative. It was demonstrated that certifications oblige cooperatives to diversify and intensify advisory services. They do this by engaging other stakeholders to provide services. In some cases these are new collaborations and in other cases cooperatives are forced to reconfigure existing collaborations with stakeholders. These new advisory services influence farming practices and farmers' paradigms about sustainable practices.

In order to better understand how the benefits of certification can be realized in other regions, I asked *What role does social capital play in the management of certifications?* Social capital was found to have an effect on the distribution of incentives for certification and the cooperatives' decisions about collective or individual certifications. The social capital of individuals also plays a role in their acceptance of voluntary environmental certifications. If well-managed, certifications have the potential to create a virtuous cycle of building social capital within a cooperative.

Résumé

Cette thèse vise à répondre à la question *Quel est le rôle des coopératives au Costa Rica dans la gestion de la certification volontaire du café?* Elle a démontré que les coopératives jouent un rôle important, en facilitant l'accès à la certification pour les petits producteurs. Les coopératives jouent aussi un rôle d'intermédiaire entre les autres parties prenantes, fournissent des services de appui et conseil plus intensifs à leurs membres et prennent des décisions importantes quant à la façon

d'équilibrer les motivations économiques à la certification, tout en conservant une dimension de solidarité.

Cette thèse a ensuite examiné comment les certifications changent les services consultatifs au sein de la coopérative. Il a été démontré que les certifications obligent les coopératives à diversifier et intensifier leurs services. Elles le font en impliquant d'autres parties prenantes. Dans certains cas, ce sont de nouvelles collaborations qui sont mises en place. Dans d'autres cas, les coopératives sont obligées de reconfigurer les collaborations existantes. Ces nouveaux services consultatifs influencent les pratiques agricoles et la compréhension des agriculteurs du paradigme des pratiques durables.

Afin de mieux comprendre comment les avantages de la certification peuvent être reproduits dans d'autres régions, nous posons la question du *rôle du capital social dans la gestion de la certification?* Nous constatons que le capital social a un effet sur les incitations économiques à la certification, et les décisions des coopératives quant à la mise en place de certifications collectives ou individuelles. Le capital social des individus joue également un rôle dans leur acceptation des certifications environnementales volontaires. Si elle est bien gérée, la certification a le potentiel de créer un cercle vertueux de renforcement du capital social au sein d'une coopérative.

Resumen

Esta tesis se realizó para responder a la pregunta ¿Cuál es el papel de las cooperativas de Costa Rica en la gestión de certificaciones voluntarias de café? Se ha demostrado que las cooperativas desempeñan un papel importante facilitando el acceso de los pequeños agricultores a las certificaciones, que actúa como intermediario entre otras partes interesadas para proporcionar más servicios de asesoramiento intensivo a los miembros y tomar decisiones importantes con respecto a la forma de equilibrar los incentivos financieros para la certificación con la solidaridad dentro de la cooperativa.

Luego se examinó la forma en que las certificaciones cambian los servicios de asesoramiento en la cooperativa. Se demostró que las certificaciones obligan a las cooperativas a diversificar e intensificar

los servicios de asesoramiento. Lo hacen mediante la participación de otras partes interesadas para proporcionar servicios. En algunos casos se trata de nuevas colaboraciones y en otros casos las cooperativas se ven obligadas a volver a configurar las colaboraciones existentes con las partes interesadas. Estos nuevos servicios de asesoramiento influyen en las prácticas agrícolas y los paradigmas de los agricultores acerca de las prácticas sostenibles.

Con el fin de comprender mejor cómo los beneficios de la certificación se pueden realizar en otras regiones, pregunté ¿Qué papel juega el capital social en la gestión de las certificaciones? Se encontró que el capital social tiene un efecto sobre la distribución de los incentivos para la certificación y las decisiones de las cooperativas sobre las certificaciones colectivas o individuales. El capital social de los individuos también juega un papel en su aceptación de las certificaciones voluntarias ambientales. Si son bien administradas, las certificaciones tienen el de potencial de crear un círculo virtuoso de la construcción de capital social dentro de una cooperativa.

This thesis began asking the general question: *What is the role of Costa Rican coffee cooperatives in the management of voluntary coffee certifications?*

This question is further broken down in the following subquestions: *What factors influence the decisions that cooperatives make regarding the management of certifications?; What financial and non-financial incentives are offered to cooperatives and their members to encourage participation in voluntary certifications?; What are the effects of certification at the cooperative level?*

Cooperatives play a vital role in managing certifications and helping small farmers access certified markets. This role includes implementing a system of internal control and traceability to ensure quality and separate certified and non-certified product. Cooperatives also assess the needs of the members regarding advisory services needed to change farming practices and increase traceability. They provide the needed services to their members. These services can put a considerable strain on the human resources of the cooperative and the amount of coffee sold with certification may be quite low. For these reasons cooperatives often choose to certify only a portion of their members.

When deciding which certifications to pursue, cooperatives consider the quality and quantity of coffee they produce. Cooperatives with low quality coffee (particularly small and medium-sized cooperatives located at low altitudes) often choose Fair Trade and possibly organic certification. Large cooperatives with high quality coffee are more likely to pursue CAFE Practices, Rainforest Alliance and Utz. They often pursue multiple certifications but do not sell more than 30% of the harvest in any one certification. Small cooperatives which produce high quality coffee often find that they do not need certifications to obtain a high price for their coffee.

Cooperatives may or may not receive a premium for certified coffee. The premium depends on the world price of coffee and on the type of certification. Premiums for certifications such as Fair Trade, organic and Utz fluctuate inversely with the world price of coffee. Financial incentives for these certifications may completely disappear in times of high world prices. While the premium for

Conclusions

Rainforest Alliance appears to be quite stable, the premium for CAFE Practices appears to fluctuate along with market highs and lows. In times of low world prices financial incentives may be absent.

Even if cooperatives receive a premium for certified coffee, they may not be able or willing to offer a premium to individually certified members. This is because certifications induce cooperatives to offer more intense and diversified services to their members, which leads us to the next research questions:

- *How do a cooperative's advisory services change with certification?*
- *How do certifications affect outside stakeholders' influence on cooperative services?*
- *Which services (group training, farm visits, provision of plant material, etc.) are most effective in increasing the sustainability of farming practices?*

Certifications compel cooperatives to promote a more holistic approach to coffee production. In addition to traditional advisory services which focus on the management of pests and disease and raising productivity, certification standards oblige cooperatives to offer services related to soil and water protection, pesticide safety and handling and adaptation to climate change. Cooperatives engage in new partnerships with outside stakeholders or reconfigure existing relationships to provide these services. Cooperative administrators agree that this holistic approach has changed farmers' perceptions about their farming practices. Farmers gradually realize that they can manage their farms without the prohibited pesticides and that a certain pest threshold is acceptable.

Group training is the most effective in changing management practices such as maintaining a farm record book, wearing a mask while applying pesticides. Certifications do not seem to be very effective in increasing the sustainability of farming practices which compete directly with yield or quality. Only organic certification, which offers a (sometimes substantial) premium to compensate for loss of yield is able to significantly decrease agrochemical use. Other farming practices, such as the use of shade trees, are linked to more tangible services, like the free provision of plant material.

As cooperatives form new relationships with stakeholders, they increase their networks. This can be considered an increase in social capital. Members benefit from this social network by accessing information from new sources. This leads us to the final research questions:

- *What role does the social capital of the members and the organization play in the management of voluntary certifications?*
- *What is the potential for certifications to build social capital in cooperatives?*

Cooperatives which participate in certifications have medium to high levels of social capital at the organizational level. A certain level of social capital is necessary to cooperate with outside organizations and to ensure an equitable and transparent distribution of financial and non-financial incentives for certification. Cooperatives with high levels of bridging social capital have a more commercial approach to certifications, and a few select members may reap the benefits of certification. Cooperatives with a strong sense of solidarity among all members choose collective certifications and an equal distribution of financial and in-kind incentives. Cooperatives with low levels of both types of social capital are not able to access certifications because of lack of empowerment or collaboration with other organizations and lack of solidarity within the group.

The social capital of the individuals in the cooperative also effects the management of certifications. Individuals who voluntarily pursue Rainforest Alliance certification without financial compensation are more likely to have generalized trust in others. Higher generalized trust was not found in members individually certified in Utz and who were paid a certification premium.

On one hand, certifications have the potential to increase the social capital of the membership by strengthening the community embeddedness of farmers' organizations. Consistent and regular contact between farmers and cooperative staff builds trust and can facilitate the production of knowledge about new farming practices. The enforcement of the norms of certification can also build trust and reciprocity within the cooperative.

On the other hand, poorly managed certifications can increase the inequality within an organization and destroy trust. The national context into which the certification is adopted must be considered and, if necessary, the levels of social capital should be ameliorated before the adoption of certification.

In conclusion, Costa Rica provides an interesting environmental to study coffee certifications because of the important role played by farmers' organizations and the unique policy conditions. I have demonstrated that cooperatives play an important role by facilitating small farmer access to certifications, acting as an intermediary between other stakeholders to provide services including more intensive advisory services to members and make important decisions regarding how to balance the financial incentives for certification with the solidarity within the cooperative.

Certifications change advisory services in the cooperative. I demonstrated that certifications compel cooperatives to diversify and intensify advisory services. They do this by engaging other stakeholders to directly provide services or to help the cooperatives to improve services delivery. In some cases these are new collaborations and in other cases cooperatives are forced to reconfigure existing collaborations with stakeholders. These new advisory services influence farming practices and farmers' perceptions about sustainable practices.

Social capital plays an interesting role in the management of voluntary coffee certifications. The balance of social capital in a cooperative affects the equality in the distribution of financial and in-kind incentives. The social capital of individuals also plays a role in their acceptance of voluntary environmental certifications. If well-managed, certifications have the potential to create a virtuous cycle of social capital creation within a cooperative.

References

4C Association. (2012). Statutes of the 4C Association. Geneva, Switzerland: 4C Association.

Agnitsch, K., Flora, J., & Ryan, V. (2006). Bonding and bridging social capital: The interactive effects on community action. *Community Development, 37*(1), 36-51.

Alvarez, G., Pilbeam, C., & Wilding, R. (2010). Nestlé Nespresso AAA sustainable quality program: an investigation into the governance dynamics in a multi-stakeholder supply chain network. *Supply Chain Management: An International Journal, 15*(2), 165-182. doi: 10.1108/13598541011028769

Anderson, L. R., Mellor, J. M., & Milyo, J. (2004). Social Capital and Contributions in a Public-Goods Experiment. *The American Economic Review, 94*(2), 373-376.

Anheier, H., & Kendall, J. (2002). Interpersonal trust and voluntary associations: examining three approaches. *The British Journal of Sociology, 53*(3), 343-362. doi: 10.1080/0007131022000000545

Arnot, C., Boxall, P. C., & Cash, S. B. (2006). Do ethical consumers care about price? A revealed preference analysis of fair trade coffee purchases. *Canadian Journal of Agricultural Economics/Revue canadienne d'agroeconomie, 54*(4), 555-565.

Auld, G. (2010). Assessing Certification as Governance: Effects and Broader Consequences for Coffee. *Journal of Environment & Development, 19*(2), 215-241.

Babin, N. (2014). The Coffee Crisis, Fair Trade, and Agroecological Transformation: Impacts on Land Use Change in Costa Rica. *Agroecology and Sustainable Food Systems*, 99-129. doi: 10.1080/21683565.2014.960549

Babin, N. L. (2012). *Agrarian change, agroecological transformation and the coffee crisis in Costa Rica.*

Bacon, C. M. (2005). Confronting the Coffee Crisis: Can Fair Trade, Organic, and Specialty Coffees Reduce Small-Scale Farmer Vulnerability in Northern Nicaragua? *World Development, 33*(3), 497-511. doi: http://dx.doi.org/10.1016/j.worlddev.2004.10.002

Bacon, C. M. (2008). Confronting the coffee crisis fair trade, sustainable livelihoods and ecosystems in Mexico and Central America. from http://site.ebrary.com/id/10209883

Bacon, C. M. (2010). A Spot of Coffee in Crisis Nicaraguan Smallholder Cooperatives, Fair Trade Networks, and Gendered Empowerment. *Latin American Perspectives, 37*(2), 50-71. doi: 10.1177/0094582x09356958

Bacon, C. M., Mendez, V. E., Gomez, M. E. F., Stuart, D., & Flores, S. R. D. (2008). Are Sustainable Coffee Certifications Enough to Secure Farmer Livelihoods? The Millenium Development Goals and Nicaragua's Fair Trade Cooperatives. *Globalizations, 5*(2), 259-274. doi: 10.1080/14747730802057688

Barham, B. L., & Weber, J. G. (2012). The Economic Sustainability of Certified Coffee: Recent Evidence from Mexico and Peru. *World Development, 40*(6), 1269-1279. doi: http://dx.doi.org/10.1016/j.worlddev.2011.11.005

Basu, A. K., & Hicks, R. L. (2008). Label performance and the willingness to pay for Fair Trade coffee: a cross-national perspective. *International Journal of Consumer Studies, 32*(5), 470-478.

Beuchelt, T. D., & Zeller, M. (2011). Profits and poverty: Certification's troubled link for Nicaragua's organic and fairtrade coffee producers. *Ecological Economics, 70*(7), 1316-1324.

Beuchelt, T. D., & Zeller, M. (2013). The role of cooperative business models for the

success of smallholder coffee certification in Nicaragua: A comparison of conventional, organic and Organic-Fairtrade certified cooperatives. *Renewable Agriculture and Food Systems, 28*(3), 195-211. doi: http://dx.doi.org/10.1017/S1742170512000087

Bhattarai, M., & Hammig, M. (2001). Institutions and the Environmental Kuznets Curve for Deforestation: A Crosscountry Analysis for Latin America, Africa and Asia. *World Development, 29*(6), 995-1010. doi: http://dx.doi.org/10.1016/S0305-750X(01)00019-5

Bibby, A. (2006). *Tanzania's cooperatives look to the future*. unpublished. Retrieved from http://www.andrewbibby.com/pdf/Tanzania.pdf

Bigirwa, J. (2005). *Fairtrade and cooperatives--the Uganda Experience*. Paper presented at the COPAC Open Forum 'Fair Trade and Cooperatives', Berlin, Germany.

Bitzer, V., Francken, M., & Glasbergen, P. (2008). Intersectoral partnerships for a sustainable coffee chain: Really addressing sustainability or just picking (coffee) cherries? *Global Environmental Change, 18*(2), 271-284. doi: http://dx.doi.org/10.1016/j.gloenvcha.2008.01.002

Blackman, A., & Naranjo, M. A. (2012). Does eco-certification have environmental benefits? Organic coffee in Costa Rica. *Ecological Economics, 83*, 58-60. doi: http://dx.doi.org/10.1016/j.ecolecon.2012.08.001

Blackman, A., & Rivera, J. (2010). The evidence base for environmental and socioeconomic impacts of "sustainable" certification *Resources for the Future: RF-DP-10-17*. Washington, DC: Resources for the Future.

Bosselmann, A. S. (2012). Mediating factors of land use change among coffee farmers in a biological corridor. *Ecological Economics, 80*(0), 79-88. doi: http://dx.doi.org/10.1016/j.ecolecon.2012.05.007

Bosselmann, A. S., Dons, K., Oberthur, T., Olsen, C. S., Ræbild, A., & Usma, H. (2009). The influence of shade trees on coffee quality in small holder coffee agroforestry systems in Southern Colombia. *Agriculture, Ecosystems & Environment, 129*(1–3), 253-260. doi: http://dx.doi.org/10.1016/j.agee.2008.09.004

Bray, D. B., Sanchez, J. L. P., & Murphy, E. C. (2002). Social dimensions of organic coffee production in Mexico: lessons for eco-labeling initiatives. *Society &Natural Resources, 15*(5), 429-446.

Camacho Sandoval, A. C. (2011). Venta de café con rostro de mujer. *El Financiero, 15*(807).

Carlsen, K., Hansen, C. P., & Lund, J. F. (2012). Factors affecting certification uptake — Perspectives from the timber industry in Ghana. *Forest Policy and Economics, 25*(0), 83-92. doi: http://dx.doi.org/10.1016/j.forpol.2012.08.011

Carmona-Lavado, A., Cuevas-Rodríguez, G., & Cabello-Medina, C. (2010). Social and organizational capital: Building the context for innovation. *Industrial Marketing Management, 39*(4), 681-690. doi: http://dx.doi.org/10.1016/j.indmarman.2009.09.003

Carrasco, I. (2007). Corporate Social Responsibility, Values, and Cooperation. *International Advances in Economic Research, 13*(4), 454-460. doi: 10.1007/s11294-007-9110-2

Castro-Tanzi, S., Dietsch, T., Urena, N., Vindas, L., & Chandler, M. (2012). Analysis of management and site factors to improve the sustainability of smallholder coffee production in Tarrazú, Costa Rica. *Agriculture, Ecosystems & Environment, 155*, 172-181.

Castro, A. J. (2013). *El Café en Costa Rica*. San José, Costa Rica: Universidad de Costa Rica.

Caulkins, D. D. (2009). 4 Grid-group analysis *Handbook of social capital: the troika of sociology, political science and economics* (pp. 57).

Censos, I. N. d. E. y. (2012). Ingreso Mensual Promedio Empleo Principal Según Características del empleo. from Instituto Nacional de Estadísticas y Censo http://datos.inec.go.cr/datastreams/75702/ingreso-mensual-promedio-empleo-principal-segun-caract-iii-tri-2010-ii-tri-2012/

Chaddad, F. R., & Cook, M. L. (2004). Understanding new cooperative models: an ownership–control rights typology. *Applied Economic Perspectives and Policy, 26*(3), 348-360.

Chang, C.-C. L. (2011). Effects of social capital structure on organizational learning. *African Journal of Business Management, 5*(18), 7691-7701.

Chloupkova, J. S., G; Svendsen G. (2003). Building and Destroying Social Capital: The case of cooperative movements in Denmark and Poland. *Agriculture and Human Values, 20*, 241-252.

Cohen, D., & Prusak, L. (2001). *In good company: How social capital makes organizations work*: Harvard Business Press.

Collado, A. (2007). Capital social y su vínculo con la pobreza en Costa Rica. *Ciencias Económicas, 25*(1).

Colletta, N. J., & Cullen, M. L. (2000). Violent conflict and the transformation of social capital lessons from Rwanda, Somalia, Cambodia, and Guatemala.

Compagnone, C., & Hellec, F. (2015). Farmers' Professional Dialogue Networks and Dynamics of Change: The Case of ICP and No-Tillage Adoption in Burgundy (France). *Rural sociology, 80*(2), 248-273. doi: 10.1111/ruso.12058

CooproNaranjo, R. L. (2013). La Certificación de CAFE Practices. Retrieved July 9, 2013, from http://www.coopronaranjorl.com/nosotros/

Cramer, C., Johnston, D., Oya, C., & Sender, J. (2014). Fairtrade, Employment and Poverty Reduction in Ethiopia and Uganda. *Final report submitted to DfID, SOAS, University of London*.

Daviron, B., & Ponte, S. (2005). *The coffee paradox: Global markets, commodity trade and the elusive promise of development*: Zed books.

Daviron, B., & Vagneron, I. (2011). From Commoditisation to De-commoditisation… and Back Again: Discussing the Role of Sustainability Standards for Agricultural Products. *Development Policy Review, 29*(1), 91-113.

Degli Antoni, G. (2009). Intrinsic vs. extrinsic motivations to volunteer and social capital formation. *Kyklos, 62*(3), 359-370.

Durston, J. (1998). *Building social capital in rural communities (where it does not exist).* Paper presented at the Latin American Studies Association Annual Meetings, Chicago.

Elder, S. D., Zerriffi, H., & Le Billon, P. (2012). Effects of Fair Trade Certification on Social Capital: The Case of Rwandan Coffee Producers. *World Development, 40*(11), 2355-2367. doi: http://dx.doi.org/10.1016/j.worlddev.2012.06.010

Elder, S. D., Zerriffi, H., & Le Billon, P. (2013). Is Fairtrade certification greening agricultural practices? An analysis of Fairtrade environmental standards in Rwanda. *Journal of Rural Studies, 32*(0), 264-274. doi: http://dx.doi.org/10.1016/j.jrurstud.2013.07.009

Enzama, W. (2013). *Producer Cooperatives and Challenges of Vertical Coordination: Lessons from Angetta, Northern Uganda*. Paper presented at the Africa and Food: Challenges, Risks and Opportunities, Ghent University, Belgium.

Evans, S. (2010). *The green republic: A conservation history of Costa Rica*: University of Texas Press.

Fairtrade International. (2014). Fairtrade Standard for Small Producer Organizations. Bonn, Germany:

Fairtrade Labelling Organizations International.

Faure, G., Desjeux, Y., & Gasselin, P. (2012). New challenges in agricultural advisory services from a research perspective: a literature review, synthesis and research agenda. *The Journal of Agricultural Education and Extension, 18*(5), 461-492.

Faure, G., Le Coq, J.-F., Vagneron, I., Hocde, H., Munoz, G. S., & Kessari, M. (2012). Stratégies des organisations de producteurs de café au Costa Rica vis-à-vis des certifications environnementales et sociales. *Cahiers Agricultures, 21*(2-3), 162-168. doi: DOI 10.1684/agr.2012.0545

Faure, G., Le Coq, J. F., & Rodriguez, N. (2011). Emergence et diversité des trajectories des organisations de producteurs au Costa Rica. *Economie Rural, 323*(Mai-Juin 2011).

Fisher, R. (2013). 'A gentleman's handshake': The role of social capital and trust in transforming information into usable knowledge. *Journal of Rural Studies, 31*, 13-22.

Flora, C. B., Flora, J., & Gasteyer, S. P. (2015). *Rural Communities: Legacy + Change* (5th Edition ed.): Westview Press.

Flores, M. (2002). *Centroamérica: El impacto de la caída de los precios del café* (Vol. 9): United Nations Publications.

Fraser, J., Fisher, E., & Arce, A. (2013). Reframing 'crisis' in Fair Trade coffee production: Trajectories of agrarian change in Nicaragua. *Journal of Agrarian Change, 14*(1), 52-73.

Frey, B. S., & Jegen, R. (1999). *Motivation crowding theory: A survey of empirical evidence* (I. f. E. R. i. Economics Ed.): University of Zurich.

Fukuyama, F. (2001). Social capital, civil society and development. *Third World Quarterly, 22*(1), 7-20.

Getz, C. (2008). Social Capital, Organic Agriculture, and Sustainable Livelihood Security: Rethinking Agrarian Change in Mexico. *Rural sociology, 73*(4), 555-579.

Giovannucci, D., Byers, A., & Liu, P. (2008). Adding value: Certified coffee trade in North America *Value-adding standards in the North American Food Market*: MPRA.

Giovannucci, D., & Ponte, S. (2005). Standards as a new form of social contract? Sustainability initiatives in the coffee industry. *Food Policy, 30*(3), 284-301.

Ley de Asociaciones Cooperativas y de Creación del INFOCOOP (Instituto de Fomento Cooperative) (1968).

Ley de Asociaciones No 218 (1970).

Consorcios (1999).

González, A. A., & Nigh, R. (2005). Smallholder participation and certification of organic farm products in Mexico. *Journal of Rural Studies, 21*(4), 449-460.

Gotschi, E., Njuki, J., & Delve, R. (2009). Equal Numbers, Equal Chances? A Case Study of Gender Differences in the Distribution of Social Capital in Smallholder Farmer Groups in Búzi District, Mozambique. *The European Journal of Development Research, 21*(2), 264-282. doi: http://dx.doi.org/10.1057/ejdr.2008.20

Gouët, C., & Van Paassen, A. (2012). Smallholder marketing cooperatives and smallholders' market access: lessons learned from the actors involved. *The Journal of Agricultural Education and Extension, 18*(4), 369-385.

Grootaert, C. (2004). *Measuring social capital: an integrated questionnaire*: World Bank Publications.

Gross, J. L., & Rayner, S. (1985). *Measuring culture: A paradigm for the analysis of social organization*: Columbia University Press.

Gutiérrez-Montes, I., Emery, M., & Fernandez-Baca, E. (2012). Why gender matters to ecological management and poverty reduction *Integrating Ecology and Poverty Reduction* (pp. 39-59): Springer.

Haight, C. (2011). The Problem with Fair Trade Coffee. *Stanford Social Innovation Review, Summer 2011*.

Hatanaka, M., Bain, C., & Busch, L. (2005). Third-party certification in the global

agrifood system. *Food Policy, 30*(3), 354-369. doi: http://dx.doi.org/10.1016/j.foodpol.2005.05.006

Hejnowicz, A. P., Rudd, M. A., & White, P. C. L. (2016). A survey exploring private farm advisor perspectives of agri-environment schemes: The case of England's Environmental Stewardship programme. *Land Use Policy, 55*, 240-256. doi: http://dx.doi.org/10.1016/j.landusepol.2016.04.005

Hopfensitz, A., & Miquel-Florensa, J. (2013). Public Good Contributions Among Coffee Farmers in Costa Rica: Cooperativists and Private Market Participants. *Toulouse School of Economics Working Paper, TSE-395*.

Howells, J. (2006). Intermediation and the role of intermediaries in innovation. *Research policy, 35*(5), 715-728.

Régimen Relaciones de Productores, Beneficiadores y Exportadores Café (1961).

Icafe. (2013a). Informe Sobre la Actividad Cafetalera de Costa Rica (pp. 105). San Jose, Costa Rica: ICAFE.

Icafe. (2013b). Instituto del Cafe de Costa Rica. Retrieved September 24, 2013, from http://www.icafe.go.cr/nuestro_cafe/estructura%20del%20sector/productores.html

Icafe. (2014). Informe Sobre la Actividad Cafetalera de Costa Rica. San José, Costa Rica: Instituto del Café de Costa Rica.

IFOAM. (2014). The IFOAM norms for organic production and processing. Germany: IFOAM.

Ingram, J. (2008). Agronomist–farmer knowledge encounters: an analysis of knowledge exchange in the context of best management practices in England. *Agriculture and Human Values, 25*(3), 405-418. doi: 10.1007/s10460-008-9134-0

Instituto Nacional de Estadisticas y Censos. (2007). *Censo Cafetalero*. San José, Costa Rica: Retrieved from http://www.icafe.go.cr/sector_cafetalero/tram_linea/censo.pdf.

International Co-operative Alliance. (2015). What is a Co-operative? Retrieved May 1, 2016, from http://ica.coop/en/what-co-operative

International Coffee Organization. (2015). Total Production by all exporting countries.

International Trade Centre. (2012). Harvested by Women Norms and Standards: Standardsmap.org.

Johannessen, S., & Wilhite, H. (2010). Who really benefits from fairtrade? An analysis of value distribution in fairtrade coffee. *Globalizations, 7*(4), 525-544.

Jones, V. N., & Woolcock, M. (2007). Using mixed methods to assess social capital in low income countries: A practical guide: BWPI, The University of Manchester.

Jones, V. N., & Woolcock, M. (2009). 22 Mixed methods assessment1. *Handbook of social capital: the troika of sociology, political science and economics*, 379.

Karsenty, A., & Ongolo, S. (2012). Can "fragile states" decide to reduce their deforestation? The inappropriate use of the theory of incentives with respect to the REDD mechanism. *Forest Policy and Economics, 18*, 38-45. doi: http://dx.doi.org/10.1016/j.forpol.2011.05.006

Kessari, M.-E. (2011). *Stabilité ou repture des conventions dans le commerce équitqble, une analyse par les organisations de producteurs.* (PhD), Montpellier SupAgro, Montpellier, France.

Kilian, B., Jones, C., Pratt, L., & Villalobos, A. (2006). Is sustainable agriculture a viable strategy to improve farm income in Central America? A case study on coffee. *Journal of Business Research, 59*(3), 322-330. doi: http://dx.doi.org/10.1016/j.jbusres.2005.09.015

Kilian, B., Pratt, L., Jones, C., & Villalobos, A. (2004). Can the private sector be competitive and contribute to development through sustainable agricultural business? A case study of

coffee in Latin America. *International Food and Agribusiness Management Review, 7*(3), 21-45.

Kirumba, E. G., & Pinard, F. (2010). *Determinants of farmers' compliance with coffee eco-certification standards in Mt. Kenya region.* Paper presented at the 2010 AAAE Third Conference/AEASA 48th Conference, September 19-23, 2010, Cape Town, South Africa.

Klerkx, L., & Gildemacher, P. (2012). The role of innovation brokers in agricultural innovation systemsAgriculture innovation systems: an investment sourcebook, Module 3: The World Bank. Retrieved from http://edepot.wur.nl/206356.

Klerkx, L., & Jansen, J. (2010). Building knowledge systems for sustainable agriculture: supporting private advisors to adequately address sustainable farm management in regular service contacts. *International Journal of Agricultural Sustainability, 8*(3), 148-163.

Klerkx, L., & Proctor, A. (2013). Beyond fragmentation and disconnect: Networks for knowledge exchange in the English land management advisory system. *Land Use Policy, 30*(1), 13-24. doi: http://dx.doi.org/10.1016/j.landusepol.2012.02.003

Klerkx, L., Villalobos, P., & Engler, A. (2012). Variation in implementation of corporate social responsibility practices in emerging economies' firms: A survey of Chilean fruit exporters. *Natural Resources Forum, 36*(2), 88-100. doi: 10.1111/j.1477-8947.2012.01440.x

Kramer, R. M. (1999). Trust and distrust in organizations: Emerging perspectives, enduring questions. *Annual review of psychology, 50*(1), 569-598.

Kraus, E. (2015). *The Impact of Sustainable Certifications on Coffee Farming Practices: A Case Study from Tarrazu Region, Costa Rica.* (Master of Science), University of Copenhagen, Copenhagen, Denmark.

Krishna, A. (2002). *Active social capital: Tracing the roots of development and democracy*: Columbia University Press.

Latinobarómetro. (2015a). La Confianza en América Latina 1995-2015 *20 Años de opinion publica lintinoamericana*. Santiago de Chile: Latinobarometro.

Latinobarómetro. (2015b). *Latinobarómetro: Opinión Pública Latinoamericana*.

Lazaro, E. A., Makindara, J., & Kilima, F. T. (2008). *Sustainability standards and coffee exports from Tanzania*: DIIS Working Paper.

Le Coq, J.-F., Froger, G., Pesche, D., Legrand, T., & Saenz, F. (2015). Understanding the governance of the Payment for Environmental Services Programme in Costa Rica: A policy process perspective. *Ecosystem Services*. doi: http://dx.doi.org/10.1016/j.ecoser.2015.10.003

Le Coq, J. F., Faure, G., & Saenz, F. (2012). Les organisations de producteurs dans le système de services agricoles au Costa Rica. *Économie rurale*(330-331), 175-190.

Levi, Y., & Pellegrin-Rescia, M. L. (1997). A new look at the embeddedness/disembeddedness issue: Cooperatives as terms of reference. *The Journal of Socio-Economics, 26*(2), 159-179. doi: http://dx.doi.org/10.1016/S1053-5357(97)90031-7

Lubell, M. (2004). Collaborative watershed management: A view from the grassroots. *Policy Studies Journal, 32*(3), 341-361.

Luetchford, P. (2008). *Fair trade and a global commodity : coffee in Costa Rica*. London; Ann Arbor, MI: Pluto Press.

Lyon, S. (2007). Maya Coffee Farmers and Fair Trade: Assessing the Benefits and Limitations of Alternative Markets. *CULTURE AND AGRICULTURE, 29*(2), 100-112.

Lyon, S. (2008). We want to be equal to them: Fair-trade coffee certification and gender equity within organizations. *Human Organization, 67*(3), 258-268.

Lyon, S., Bezaury, J. A., & Mutersbaugh, T. (2010). Gender equity in fairtrade-

organic coffee producer organizations: Cases from Mesoamerica. *Geoforum, 41*(1), 93-103. doi: 10.1016/j.geoforum.2009.04.006

Maak, T. (2007). Responsible leadership, stakeholder engagement, and the emergence of social capital. *Journal of Business Ethics, 74*(4), 329-343.

Maître D'Hôtel, E., & Bosc, P.-M. (2011). Neither State nor Market: The Influence of Farmers' Organizations on Agricultural Policies in Costa Rica. *Oxford Development Studies, 39*(4), 469-485.

Mehta, A., & Chavas, J.-P. (2008). Responding to the coffee crisis: What can we learn from price dynamics? *Journal of Development Economics, 85*(1–2), 282-311. doi: http://dx.doi.org/10.1016/j.jdeveco.2006.07.006

Melara, G. (2014). Promedian en $556 el Ingreso Mensual en Hogares Salvadoreños, *La Prensa Gráfica*. Retrieved from http://www.laprensagrafica.com/2014/08/25/promedian-en-556-el-ingreso-mensual-en-hogares-salvadoreos

Prohibe el uso agrícola del DDT y otros productos (1998).

Mintzberg, H. (1989). *Mintzberg on management: Inside our strange world of organizations*: Simon and Schuster.

Mintzberg, H. (2009). *Managing*. San Francisco: Berrett-Koehler Publishers.

Muradian, R., & Pelupessy, W. (2005). Governing the coffee chain: The role of voluntary regulatory systems. *World Development, 33*(12), 2029-2044. doi: DOI 10.1016/j.worlddev.2005.06.007

Mureithi, L. P. (2008). *Coffee in Kenya: some challenges for decent work*: ILO.

Mutersbaugh, T. (2002). The number is the beast: a political economy of organic-coffee certification and producer unionism. *Environment and Planning A, 34*(7), 1165-1184. doi: 10.1068/A3435

Nannestad, P. (2007). *Does social capital help solving real world collective action problems?: The logic of collective inaction in non-western immigrants in Denmark.* Paper presented at the The First World Meeting of the Public Choice Societies.

Nevins, J. (2007). Dying for a Cup of Coffee? Migrant Deaths in the US-Mexico Border Region in a Neoliberal Age. *Geopolitics, 12*(2), 228-247. doi: 10.1080/14650040601168826

Nunn, N., & Wantchekon, L. (2011). The Slave Trade and the Origins of Mistrust in Africa. *American Economic Review, 101*(7), 3221-3252. doi: 10.1257/aer.101.7.3221

Nygren, A. (1998). Environment as discourse: searching for sustainable development. *Environmental Values, 7*(2), 201-222.

Omidvar, V., & Giannakas, K. (2015). The effects of fair trade on coffee growers: a framework and analysis. *Agricultural Economics, 46*(S1), 29-39. doi: 10.1111/agec.12196

Ostrom, E. (1990). *Governing the commons: The evolution of institutions for collective action*: Cambridge university press.

Pagiola, S., Arcenas, A., & Platais, G. (2005). Can Payments for Environmental Services Help Reduce Poverty? An Exploration of the Issues and the Evidence to Date from Latin America. *World Development, 33*(2), 237-253. doi: http://dx.doi.org/10.1016/j.worlddev.2004.07.011

Pappila, M. (2013). Forest certification and trust — Different roles in different environments. *Forest Policy and Economics, 31*(0), 37-43. doi: http://dx.doi.org/10.1016/j.forpol.2012.10.005

Parrish, B. D., Luzadis, V. A., & Bentley, W. R. (2005). What Tanzania's coffee farmers can teach the world: a performance-based look at the fair trade–free trade debate. *Sustainable Development, 13*(3), 177-189.

Paxton, P. (2007). Association Memberships and Generalized Trust: A Multilevel Model Across 31 Countries. *Social Forces, 86*(1), 47-76.

Penrose-Buckley, C. (2007). *Producer organisations: A guide to developing collective rural enterprises*: Oxfam.

Pirotte, G., Pleyers, G., & Poncelet, M. (2006). Fair-trade coffee in Nicaragua and Tanzania: a comparison. *Development in Practice, 16*(5), 441-451.

Potts, J., Lynch, M., Wilkings, A., Huppe, G., Cunningham, M., & Voora, V. (2014). The state of sustainability initiatives review (2014) Standards and the green economy. *International Institute for Sustainable Development (IISD) and the International Institute for Environment and Development (IIED)*.

Potts, J., Van Der Meer, J., & Daitchman, J. (2010). The state of sustainability initiatives review 2010: Sustainability and transparency: International Institute for Sustainable Development.

Poulton, C., Dorward, A., & Kydd, J. (2010). The future of small farms: New directions for services, institutions, and intermediation. *World Development, 38*(10), 1413-1428.

Pretty, J. (2003). Social Capital and the Collective Management of Resources. *Science, 302*(5652), 1912-1914.

Pretty, J., & Smith, D. (2004). Social capital in biodiversity conservation and management. *Conservation Biology, 18*(3), 631-638.

Pretty, J., & Uphoff, N. (2002). Social and human capital for sustainable agriculture. *Agroecological innovations: increasing food production with participatory development*, 47-57.

Pretty, J., & Ward, H. (2001). Social Capital and the Environment. *World Development, 29*(2), 209-227. doi: http://dx.doi.org/10.1016/S0305-750X(00)00098-X

Putnam, R. D., Leonardi, R., & Nanetti, R. Y. (1994). *Making democracy work: Civic traditions in modern Italy*: Princeton university press.

Quispe, J. (2007). *Caracterizacion del impacto ambiental y productivo de las diferentes normas de certificacion de café en Costa Rica.* (Master of Science), Centro Agronomico Tropical de Investigacion y Ensenanza, Turrialba, Costa Rica.

Rainforest Alliance. (2014). Rainforest Alliance Policy on Independence in Certification. Retrieved January 4, 2016, 2016, from http://www.rainforest-alliance.org/sites/default/files/uploads/3/G-05-RA-Independence-in-Certification-Policy-04Feb14.pdf

Rainforest Alliance, & SalvaNatura, E. S. (2010). Sustainable Agriculture Standard *San José, Costa Rica: Sustainable Agriculture Network, Rainforest Alliance*.

Rawlins, B. R. (2008). Measuring the relationship between organizational transparency and employee trust. *Public Relations Journal, 2*(2), 1-21.

Raynolds. (2002). *Poverty alleviation through participation in Fair Trade Coffee Networks : existing research and critical issues*. New York: Ford Foundation.

Raynolds. (2009). Mainstreaming Fair Trade Coffee: From Partnership to Traceability. *World Development, 37*(6), 1083-1093. doi: 10.1016/j.worlddev.2008.10.001

Raynolds, Murray, D., & Heller, A. (2007). Regulating sustainability in the coffee sector: A comparative analysis of third-party environmental and social certification initiatives. *Agriculture and Human Values, 24*(2), 147-163.

Raynolds, L. (2000). Re-embedding global agriculture: The international organic and fair trade movements. *Agriculture and Human Values, 17*(3), 297-309. doi: 10.1023/A:1007608805843

Raynolds, L. T., Murray, D., & Taylor, P. L. (2005). Fair Trade Coffee: Building Producer Capacity via Global Networks. *Journal of international development., 16*(8), 1109-1122.

Renard, M.-C. (2005). Quality certification, regulation and power in fair trade.

Journal of Rural Studies, 21(4), 419-431. doi: http://dx.doi.org/10.1016/j.jrurstud.2005.09.002

Renard, M.-C. (2010). In the Name of Conservation: CAFE Practices and Fair Trade in Mexico. *Journal of Business Ethics, 92*(2), 287-299. doi: 10.1007/s10551-010-0584-0

Rice, R. A. (1999). A Place Unbecoming: The Coffee Farm of Northern Latin America. *Geographical Review, 89*(4), 554-579.

Rice, R. A. (2015). In the Pursuit of Sustainability: Lessons from the Coffee Sector. *International Journal of Environmental Protection and Policy, 3*(1), 14-19. doi: 10.11648/j.ijepp.20150301.12

Ronchi, L. (2002). The Impact of Fair Trade on Producers and their Organisations: A Case Study With COOCAFE in Costa Rica: PRUS.

Rosenberg, M. B. (1981). Social reform in Costa Rica: social security and the presidency of Rafael Angel Calderon. *Hispanic American Historical Review*, 278-296.

Ruben, R., Fort, R., & Zuñiga-Arias, G. (2009). Measuring the impact of fair trade on development. *Development in Practice, 19*(6), 777-788. doi: http://dx.doi.org/10.1080/09614520903027049

Ruben, R., & Zuñiga, G. (2011). How standards compete: comparative impact of coffee certification schemes in Northern Nicaragua. *Supply Chain Management-an International Journal, 16*(2), 98-109. doi: Doi 10.1108/13598541111115356

Sartorius, K., & Kirsten, J. (2007). A framework to facilitate institutional arrangements for smallholder supply in developing countries: An agribusiness perspective. *Food Policy, 32*(5), 640-655.

Sibelet, Mutel, M., Arragon, P., & Luye, M. (2013). Module 4: Processing and interpreting data *in* Qualitative Survey Methods Applied to Natural Resource Management: Online Learning Module., 2013, from http://entretiens.iamm.fr/course/view.php?id=5&section=4

Sibelet, N., Laffourcade, R., & Gutiérrez, I. (2015). When silence pollutes! Influence of local environmentalist discourses on coffee farmers' practices in Costa Rica. *Manuscript submitted for publication*.

Sibelet, N., & Montzieux, M. (2012). Les facteurs de résilience de la caféiculture au Kenya: de la sécurisation alimentaire à la retraite. *Cahiers Agricultures, 21*(2-3).

Sibelet, N., Mutel, M., Arragon, P., & Luye, M. (2013). Qualitative Survey Methods Applied to Natural Resource Management: Online Learning Module. 2013, from http://enquetes-cirad.iamm.fr/

Sick, D. (2008). Coffee, Farming Families, and Fair Trade in Costa Rica: New Markets, Same Old Problems? *Latin American Research Review, 43*(3), 193-208,285.

Smith, J. (2007). The search for sustainable markets: the promise and failures of fair trade. (Special issue: Rethinking free trade/fair trade). *Culture & Agriculture, 29*(2), 89-99. doi: http://dx.doi.org/10.1525/cag.2007.29.2.89

Snider, A., Canwat, V., Mogonchi, N., Malumo, N., Sibelet, N., & de Neergaard, A. (2014). *Farmers' Organisations in Nnindye, Uganda: Building Social Capital for the Conservation of Natural Resources*. Paper presented at the Tropentag, Prague, Czech Republic.

Snider, A., Faure, G., Gutiérrez, I., & Sibelet, N. (Submitted for Publication). Cooperatives and Voluntary Coffee Certifications: Rewarding Progressive Farmers or Engendering Widespread Sustainability? *Manuscript submitted for publication*.

Snider, A., Kraus, E., Sibelet, N., Bosselmann, A. S., & Faure, G. (Manuscript submitted for publication). Sustainable Coffee Certifications Influence how Cooperatives Provide Extension Services to Smallholder

Farmers in Costa Rica. *Manuscript submitted for publication*.

Sønderskov, K. M. (2008). Environmental group membership, collective action and generalised trust. *Environmental Politics, 17*(1), 78.

Sønderskov, K. M. (2009). Different goods, different effects: exploring the effects of generalized social trust in large-N collective action. *Public Choice, 140*(1-2), 145-160. doi: http://dx.doi.org/10.1007/s11127-009-9416-0

Sønderskov, K. M. (2009). The Environment. In G. T. Svendsen & G. L. H. Svendsen (Eds.), *Handbook of social capital: the troika of sociology, political science and economics* (pp. 252-271). Cheltenham, UK: Edward Elgar Publishing Limited.

Soto, G., & Le Coq, J.-F. (2011). Certification process in the coffee value chain. *Ecosystem Services from Agriculture and Agroforestry—Measurement and Payment. Edited by Rapidel B, DeClerck F, Le Coq JF, Beer J. Earthscan*, 319-345.

Starbucks Coffee Company. (2012). Generic Scorecard: Starbucks Coffee Company.

Starbucks Coffee Company. (2016). Ethical Sourcing: Coffee. Retrieved January 4, 2016, from http://www.starbucks.com/responsibility/sourcing/coffee

Starbucks Corporation. (2014). Starbucks Global Responsibility Report 2014. Seattle, Washington: Starbucks Corporation.

Svendsen, G. T., & Svendsen, G. L. H. (2009). *Handbook of social capital : the troika of sociology, political science, and economics*. Cheltenham, Glos, UK; Northampton, MA: Edward Elgar.

Tahkokallio, L., & Nygren, A. (2008). New forms of environmental governance? A case study of Costa Rican environmental NGOs. *Development in Practice, 18*(3), 345-356.

Talbot, J. M. (2002). Coffee Crisis-The Case for a Regulated Market. *Georgetown Journal of International Affairs, 3*, 45.

Ton, G., Bijman, J., & Oorthuizen, J. (2007). *Producer organisations and market chains: Facilitating trajectories of change in developing countries*: Wageningen Academic Pub.

Utz Certified. (2015). Core Code of Conduct, Version 1.1. Amsterdam, Netherlands: UTZ Certified.

Vaast, P., Bertrand, B., Perriot, J. J., Guyot, B., & Genard, M. (2006). Fruit thinning and shade improve bean characteristics and beverage quality of coffee (Coffea arabica L.) under optimal conditions. *Journal of the Science of Food and Agriculture, 86*(2), 197-204.

Vagneron, I., & Roquigny, S. (2011). Value distribution in conventional, organic and fair trade banana chains in the Dominican Republic. *Canadian Journal of Development Studies/Revue canadienne d'études du développement, 32*(3), 324-338.

Valkila, J., Haaparanta, P., & Niemi, N. (2010). Empowering Coffee Traders? The Coffee Value Chain from Nicaraguan Fair Trade Farmers to Finnish Consumers. *Journal of Business Ethics, 97*(2), 257-270. doi: DOI 10.1007/s10551-010-0508-z

Valkila, J., & Nygren, A. (2010). Impacts of Fair Trade certification on coffee farmers, cooperatives, and laborers in Nicaragua. *Agriculture and Human Values, 27*(3), 321-333. doi: 10.1007/s10460-009-9208-7

van Kooten, G. C., Nelson, H. W., & Vertinsky, I. (2005). Certification of sustainable forest management practices: a global perspective on why countries certify. *Forest Policy and Economics, 7*(6), 857-867. doi: http://dx.doi.org/10.1016/j.forpol.2004.04.003

van Rijsbergen, B., Elbers, W., Ruben, R., & Njuguna, S. N. (2016). The Ambivalent Impact of Coffee Certification on Farmers' Welfare: A Matched Panel Approach for Cooperatives in Central Kenya. *World Development, 77*, 277-292. doi:

http://dx.doi.org/10.1016/j.worlddev.2015.08.021

Vanclay, F. (2004). Social principles for agricultural extension to assist in the promotion of natural resource management. *Australian Journal of Experimental Agriculture, 44*(3), 213-222. doi: http://dx.doi.org/10.1071/EA02139

Vandorpe, M. (2014). *Coffee cooperatives and Fairtrade certification: a case study in Burundi.* GHENT UNIVERSITY.

Varangis, P. N. (2003). *Dealing with the coffee crisis in Central America: Impacts and strategies* (Vol. 2993): World Bank Publications.

Verkaart, S. (2009). Effects of Utz Certified and Fair Trade on coffee producers in Uganda and Tanzania: Certification and the people and profit dimensions of Corporate Social Responsibility (forthcoming): Nijmegen: Centre for International Development Issues.

Vunderink, G. (1990). Peasant participation and mobilization during economic crisis: The case of Costa Rica. *Studies in Comparative International Development, 25*(4), 3-34. doi: 10.1007/BF02806288

Weber, J. G. (2011). How much more do growers receive for Fair Trade-organic coffee? *Food Policy, 36*(5), 677-684.

Wennink, B., & Heemskerk, W. (2006). Farmers' organizations and agricultural innovation: Case studies from Benin, Rwanda and Tanzania. *Bulletin/Development policy and practice*(374).

Wennink, B., Nederlof, S., & Heemskerk, W. (2008). Access of the poor to agricultural services: the role of farmers' organizations in social inclusion.

Westermann, O., Ashby, J., & Pretty, J. (2005). Gender and social capital: The importance of gender differences for the maturity and effectiveness of natural resource management groups. *World Development, 33*(11), 1783-1799.

Williams, R. G. (1994). *States and social evolution: Coffee and the rise of national governments in Central America*: UNC Press Books.

Wollni, M., & Zeller, M. (2007). Do farmers benefit from participating in specialty markets and cooperatives? The case of coffee marketing in Costa Rica. *Agricultural Economics, 37*(2), 243-248. doi: http://dx.doi.org/10.1111/j.1574-0862.2007.00270.x

World Bank. (2016). Country and Lending Groups: The World Bank.

Yamagishi, T., & Yamagishi, M. (1994). Trust and commitment in the United States and Japan. *Motivation and emotion, 18*(2), 129-166.

Yandle, T., Hajj, N., & Raciborski, R. (2011). The Goldilocks Solution: Exploring the Relationship between Trust and Participation in Resource Management within the New Zealand Commercial Rock Lobster Fishery. *Policy Studies Journal, 39*(4), 631-658.

Yang, H., Klerkx, L., & Leeuwis, C. (2014). Functions and limitations of farmer cooperatives as innovation intermediaries: Findings from China. *Agricultural Systems, 127*, 115-125.

Yin, R. K. (2009). *Case study research: Design and methods* (Vol. 5): Sage publications.

Young, C., Sherman, N. P., & Rose, T. H. (1981). *Cooperatives & development: Agricultural politics in Ghana and Uganda*: Univ of Wisconsin Press.

Appendix A :

Social Capital Survey Questions

Dimension	**Questions which measure bridging social capital**	**Point value of response**
Groups and networks	I would like to ask you about the groups or organizations, networks, associations to which you belong. Of how many such groups are you a member?	Absolute number of groups
Trust and solidarity	Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?	0= One cannot be too careful, 1= In general one can trust
Trust and solidarity	How much do you trust local government officials?	0= to a very small extent, 1= to a small extent, 2= neither great nor small extent, 3= to a great extent, 4= to a very great extent
Trust and solidarity	How much do you trust national government officials?	0= to a very small extent, 1= to a small extent, 2= neither great nor small extent, 3= to a great extent, 4= to a very great extent
Trust and solidarity	How much do you trust the police?	0= to a very small extent, 1= to a small extent, 2= neither great nor small extent, 3= to a great extent, 4= to a very great extent
Information and communication	Which are the most important sources of information for you regarding coffee cultivation, and pests and disease?	Absolute number of sources
Empowerment and political action	In general, how happy do you consider yourself to be?	0= very unhappy, 1= moderately unhappy 2= neither happy nor unhappy, 3= moderately happy, 4= very happy
Empowerment and political action	Do you feel that you have the power to make important decisions that change the course of your life?	0= Totally unable to change life, 1= Mostly unable to change life, 2= neither unable nor able, 3= mostly able to change life, 4= totally able to change life
Empowerment and political action	To what extent to local government and local leaders take into account concerns voiced by you and people like you when they make decisions that affect you?	0= not at all, 1= a little, 2= a lot

Appendix

Variable	Questions which measure bonding social capital	Point value of response
Groups and networks	Do attend the cooperative's bi-annual general assemblies?	0= No, 1= yes
Groups and networks	Do you attend other cooperative events like talks and group trainings?	0= Never, 1= sometimes, 2= always
Groups and networks	In general the cooperative's administration operates	0= ineffectively, 1= Neither effectively nor ineffectively, 2= effectively
Trust and solidarity	The majority of the members of the cooperative are willing to help when it is necessary	0= Totally disagree, 1= disagree, 2= neither agree nor disagree, 3= agree, 4= totally agree
Trust and solidarity	The majority of the members of this neighborhood are willing to help when it is necessary	0= Totally disagree, 1= disagree, 2= neither agree nor disagree, 3= agree, 4= totally agree
Trust and solidarity	How much do you trust the cooperative's administration?	0= to a very small extent, 1= to a small extent, 2= neither great nor small extent, 3= to a great extent, 4= to a very great extent
Trust and solidarity	Do you think that in the last 10 years the level of trust in the cooperative has improved, gotten worse, or stayed the same?	0= gotten worse, 1= stayed the same, 2= improved
Trust and solidarity	If a community project does not directly benefit you but has benefits for many others in the village, would you contribute time to the project?	0= would not contribute time, 1= would contribute time
Trust and solidarity	If a community project does not directly benefit you but has benefits for many others in the village, would you contribute money to the project?	0= would not contribute money, 1= would contribute money
Social cohesion and inclusion	How would you characterize the social unity in the cooperative?	0= very ununited, 1= ununited, 2= neither united nor ununited, 3= united, 4= very united

Social cohesion and inclusion	There are often differences in characteristic between people in an organization. For example differences in wealth, income, social status or ethnic background. There can also be differences in religious or political beliefs or differences due to age or sex. To what extent do any such differences characterize the cooperative?	0= To a very great extent, 1= to a great extent, 2= neither great nor small extent, 3= to a small extent, 5= to a very small extent
Social cohesion and inclusion	Do you think that the cooperative's policy on pricing differentials (paying/not paying a premium for certification or altitude, depending on the cooperative) causes tension among the members?	0= To a very great extent, 1= to a great extent, 2= neither great nor small extent, 3= to a small extent, 5= to a very small extent
Collective action and cooperation	In the past 12 months have you or anyone in your family worked with others in the village to do something for the benefit of the community?	0= No, 1= yes
Collective action and cooperation	Did many people from the community participate in this (these) project(s)?	0= very few, 1= few, 2= neither few nor many, 3= many 4= very many

Appendix B:

Coffee Cooperative Census Questions

PARTE 1: DATOS GENERALES

1-A: Nombre de la cooperativa/asociación _____

1-B: ¿Cuantos productores estaban miembros de su organización en 2012?___

1-C: ¿Que fue el área total de los cafetales cultivado de sus miembros en 2012 en hectáreas? ____

1-D: ¿A que altura se encuentra el cafetal más alto de su organización? _____m

1-E: ¿A que altura se encuentra el cafetal mas bajo de su organización? _____m

1-F: ¿Cuál es la cantidad total de café que se vende por su organización en la cosecha 2012-2013? _____quintales

1-G: ¿Cual porcentaje de su cosecha de 2012-2013 se vendió de cada calidad?

SHB+_____%

SHB_____%

GHB_____%

HB_____%

PARTE 2: COSTOS DE CERTIFICACION

Por favor, completa los cuadros siguientes para cada sello.

Certificación	2-A: ¿Cuanto pagó su organización en gastos por cada certificación en 2012?	2-B: ¿Cuánto pagó su organización por las auditorías por cada certificación?
Comercio Justo		
Rainforest Alliance		
Orgánico		
CAFE Practices		
Utz Certified		
4C		
Nespresso AAA		
Otras (Especificar)		

Appendix

PARTE 3 : PARTICIPACION EN CERTIFICACIONES

Certificación	3-A ¿Cuanta área de tierra fue certificada en 2012?	3-B Certificación colectiva (c) o Individual (I) ?	3-C ¿Cuantos miembros certificados tenia su organización en cada sello en 2012?	3-D ¿Cuanto café se vendió en la cosecha 2012-2013?	3-E ¿Cual fue el primer año que se tiene cada certificación?	3-F Por favor marque la casilla correspondiente a cada año que fueron certificados en cada sello					3-G ¿Qué porcentaje de contratos recibió una prima del comprador en 2012 (adicional a la prima de calidad) por cada certificación?	3-H ¿Cuanto recibió su organización en promedio en primas (adicional a la prima de calidad) en 2012? En US$/quintal
						2008	2009	2010	2011	2012		
Comercio Justo		c										
Rainforest Alliance												
Orgánico												
CAFE Practices												
Utz Certified												
4C												
Nespresso AAA												
Otras												

References

PARTE 4: PRIMAS

4-A: ¿En la cosecha 2012-2013 ha recibido una prima por la calidad de su café?

4-B: ¿Si recibió ¿Cuál es la cantidad promedio de la prima _____$/quintal

4-C	Si	No	Que es el monto de la prima pagado por el comprador?	Que es el monto de la prima pagado a los productores? En $/quintal
¿La organización pago una prima a productores en 2012?				
¿Basado en la calidad del café?				
¿Basado en el porcentaje rojo/verde?				
¿Por certificación Comercio Justo?				
¿Por certificación Rainforest Alliance?				
¿Por producción orgánico?				
¿Por certificación CAFE Practices?				
¿Por certificación Utz?				
¿Por certificación 4C?				
¿Por certificación Nespresso AAA?				
¿Por otras certificaciones?				

PARTE 5: GASTOS DE ADMINISTRACION

5-A: ¿La certificación ha subido los gastos de administración de su cooperativa por…	Si	No
…¿Implementación de la sistema de control interno?		
…¿Tramites asociada con la certificación?		
…¿Tiempo en reuniones con los certificadores?		
…¿Transporte a los reuniones?		

5-B: ¿Tiene su organización un empleo dedicado a certificación?
5-C: ¿Tiene su organización un empleo que dedica parte de su tiempo a certificación?
5-D: Si tiene, ¿Cuánto porcentaje de su tiempo esta dedicada a certificación?__ __ _____

5-E: ¿La organización ha comprado algunos equipos a cumplir con las reglas de certificación?
5-F: ¿Hay otros tipos de infraestructura que había que poner en práctica (por favor explique)?
_____ _____

PARTE 6: TRAZABILIDAD

Puede explicar su sistema de trazabilidad?

6-C	¿En 2012, se separa la cosecha…	
	…por productor?	…por certificación?
Comercio Justo		
Rainforest Alliance		
Orgánico		
CAFE Practices		
Utz Certified		
4C		
Nespresso AAA		
Otras (Specificar)		

PARTE 7: MOTIVACIONES Y INVESTIGACIONES

7-1: ¿Cuál es la motivación más importante que usted tiene para elegir una certificación?

_____Para cumplir con la petición de un comprador
_____Para mejorar la sostenibilidad ambiental de la cooperativa
_____Para mejorar la sostenibilidad social de la cooperativa
_____Para encontrar nuevos mercados para su café
_____Para ganar una prima por el café
_____El acceso a la financiación
_____Otros motivaciones (por favor, explique_____

7-2 ¿Cuáles son los mayores desafíos para su organización? _____ _____
_____

Esas son todas mis preguntas, ¿Quiere añadir algo?

¿Quiere preguntarme algo?

¡Muchas gracias por sus respuestas!

Appendix C: Farming Practices

Questionnaire

Appendix

Semi-structured survey with cooperative members

A: Basic Information

A1: Who makes the decisions concerning the management of your coffee farm?

A2: For how long have you been the person who makes decisions?

A3: What is the area of your coffee farm(s)?

A4: Are you a member of a cooperative? Which one(s)?

A5: Do you sell your entire harvest to the cooperative? Do you sell to private mills?

A6: Does your cooperative participate in any certifications? (information cross-checked with cooperative staff)

A7: Does your farm have any certifications? (please list)

If yes,

- since what year?
- Why did you decide to certify your farm?
- What changes did you have to make to your farm to comply with (each) certification?
- What do you think about (each) certification?

B: Training and services

B1: For you, what is the most important source of information regarding growing coffee?

B2: Do you attend training sessions sponsored by the cooperative? How many times in an average year? What are the topics?

B3: Do you attend training sessions sponsored by any other organizations? Which ones? How many times in an average year? What are the topics?

B4: Do you receive site visits from the cooperative agronomist? How many times in an average year? What do you talk about?

B5: Do you receive site visits from an agronomist from any other organization? Which one(s)? How many times in an average year? What do you talk about?

B6: Do you attend any other events sponsored by the cooperative? What type of event? What other organizations are involved (Icafe, MAG, chemical companies etc)?

B7: Have you used any of the other services of the cooperative (credit, shade trees, live barriers, signage for pesticide sheds etc)? Please explain.

C: Management Practices

C1: Do you use a farm record book to record earnings, expenses, applications of chemicals, etc? When did you start using it? Why did you start using it? Did you learn how to use it at a training class?

C2: Do you apply pesticides on your farm (or does a hired laborer or family member apply them)? (If the farmer applies them personally) Can you please describe what protective equipment you wear when you apply pesticides? Over the past 20 years, have you changed what you wear when you apply pesticides? Why did you change?

D: Farming Practices:

D1: Do you use fungicides on your coffee farm? How many times did you apply fungicides last year? Would you have applied more fungicides if the price had been lower? Over the past 20 years, has your use of fungicides changed? Why did it change? Have the products that you used changed? Why?

D2: Do you use chemical herbicides on your coffee farm? How many times did you apply herbicides last year? Over the past 20 years, has your use of herbicides changed? When did it change? Why did it change?

D3: Do you use chemical fertilizers on your coffee farm? How many times did you apply fertilizers last year? Would you have applied more fertilizers last year if the price of fertilizers had been lower? Over the past 20 years, have you changed how you fertilize your coffee farm? Why did you change? Do you use a soil test to determine the amount of fertilizer you should apply?

D4: Do you have shade trees (or other shade species) in your coffee plantation? What species do you have? Over the past 20 years, has the number of shade trees on your coffee farm increased? Why? Over the past 20 years, has the number of species of shade trees on your coffee farm increase? Why? What organizations promote the use of shade tree on coffee farms?

Appendix D:

Social Capital Index Data

	Coop 1	Coop 1	Coop 1	Coop 1	Coop 1	Coop 1	Coop 1	Coop 1	Coop 1	Coop 1	Coop 1	Coop 1	Coop 1	Coop 1	Coop 1	Coop 1	Coop 1	Coop 1							
Bonding	0,916667	0,884615	0,846154	0,634615	0,596154	0,884615	0,865385	0,961538	0,865385	0,788462	0,769231	0,826923	0,681818	0,692308	0,673077	0,615385	0,807692	0,846154							
Bridging	0,640741	0,572222	0,588889	0,451852	0,364815	0,52037	0,652083	0,585185	0,629167	0,612963	0,612963	0,720833	0,288889	0,609259	0,502083	0,445238	0,509524	0,861111							
	Coop 2	Coop 2	Coop 2	Coop 2	Coop 2	Coop 2	Coop 2	Coop 2	Coop 2	Coop 2	Coop 2	Coop 2	Coop 2	Coop 2	Coop 2	Coop 2	Coop 2	Coop 2	Coop 2							
Bonding	0,892857	0,857143	0,875	0,482143	0,767857	0,767857	0,839286	0,678571	0,875	0,857143	0,875	0,833333	0,785714	0,821429	0,767857	0,711538	0,892857	0,714286							
Bridging	0,683333	0,751852	0,580952	0,62963	0,724074	0,47963	0,564583	0,618519	0,738889	0,666667	0,622222	0,670833	0,707407	0,718519	0,451852	0,427778	0,833333	0,512963							
	Coop 2	Coop 2	Coop 2	Coop 2	Coop 2	Coop 2	Coop 2	Coop 2	Coop 2	Coop 2	Coop 2	Coop 2	Coop 2	Coop 2	Coop 2	Coop 2	Coop 2	Coop 2	Coop 2	Coop 2	Coop 2	Coop 2	Coop 2	Coop 2	Coop 2	Coop 2	Coop 2
Bonding	0,5	0,642857	0,807692	0,767857	0,767857	0,964286	0,615385	0,75	0,839286	0,692308	0,714286	0,839286	0,807692	0,903846	0,803571	0,732143	0,714286	0,803571	0,964286	0,839286	0,946429	0,732143	0,571429	0,666667	0,4375
Bridging	0,37963	0,559259	0,531481	0,598148	0,6	0,777778	0,457407	0,624074	0,694444	0,47037	0,644444	0,275926	0,927778	0,705556	0,640741	0,512963	0,772222	0,794444	0,624074	0,690741	0,761111	0,52963	0,435185	0,347917	0,191667
	Coop 3	Coop 3	Coop 3	Coop 3	Coop 3	Coop 3	Coop 3	Coop 3	Coop 3	Coop 3	Coop 3	Coop 3	Coop 3												
Bonding	0,678571	0,75	0,946429	0,576923	0,769231	0,596154	0,625	0,875	0,803571	0,604167	0,458333	0,730769	0,75												
Bridging	0,655556	0,355556	0,735185	0,540741	0,355556	0,475926	0,612963	0,664583	0,587037	0,507407	0,612963	0,448148	0,716667												
	Coop 4	Coop 4	Coop 4	Coop 4	Coop 4	Coop 4	Coop 4	Coop 4	Coop 4	Coop 4	Coop 4	Coop 4	Coop 4	Coop 4	Coop 4	Coop 4	Coop 4	Coop 4							
Bonding	0,65	1	0,729167	0,625	0,5	0,857143	0,892857	0,982143	0,928571	0,557692	0,961538	0,928571	0,767857	0,821429	0,660714	0,444444	0,535714	0,625							
Bridging	0,448148	0,674074	0,581481	0,646296	0,22381	0,8	0,581481	0,52037	0,568519	0,383333	0,474074	0,835185	0,540741	0,735185	0,562963	0,547222	0,646296	0,418519							
	Coop 4	Coop 4	Coop 4	Coop 4	Coop 4	Coop 4	Coop 4	Coop 4	Coop 4	Coop 4	Coop 4	Coop 4	Coop 4	Coop 4	Coop 4	Coop 4	Coop 4	Coop 4	Coop 4	Coop 4	Coop 4	Coop 4	Coop 4	Coop 4	Coop 4	Coop 4	Coop 4
Bonding	0,727273	0,704545	0,678571	0,75	0,785714	0,788462	0,725	0,75	0,696429	0,708333	0,596154	0,678571	1	0,785714	1	0,732143	0,803571	0,767857	0,785714	0,839286	0,821429	0,53125	0,821429	0,865385	0,590909
Bridging	0,55	0,457407	0,540741	0,568519	0,614815	0,587037	0,590741	0,452083	0,512963	0,688889	0,47963	0,437037	0,694444	0,451852	0,701852	0,410417	0,574074	0,52963	0,540741	0,668519	0,618519	0,61875	0,309259	0,401852	0,588889
	Coop 5	Coop 5																							
Bonding	0,791667	0,916667																							
Bridging	0,507407	0,546296																							

Appendix E: Declaration of contribution to original articles

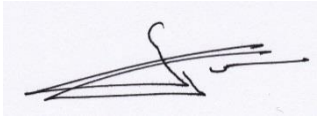
Article: Small Farmer Cooperatives and Voluntary Coffee Certifications: Rewarding Progressive Farmers of Engendering Widespread Sustainability in Costa Rica?

Anna Snider, Guy Faure, Isabel Guitérrez, Nicole Sibelet

The authors concede that at least 80% of the work has been done by Anna Snider and that they will not present this article as an element of another thesis by articles.

Signatures:

Anna Snider



Guy Faure

Isabel Gutiérrez

Nicole Sibelet

Article: Voluntary Coffee Certifications Influence how Cooperatives Provide Advisory Services to Smallholder Farmers in Costa Rica

Anna Snider, Eva Kraus, Aske Bosselmann, Nicole Sibelet, Guy Faure

The authors concede that at least 80% of the work has been done by Anna Snider and that they will not present this article as an element of another thesis by articles.

Signatures:

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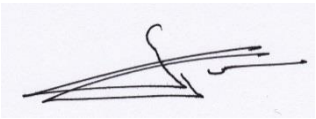
Aske Bosselmann

Nicole Sibelet



Guy Faure

Article: Social Capital and the Management of Sustainable Coffee Certifications in the National Context of Costa Rica

Anna Snider, Ana Afonso Gallegos, Isabel Gutiérrez, Nicole Sibelet

The authors concede that at least 80% of the work has been done by Anna Snider and that they will not present this article as an element of another thesis by articles.

Signatures:

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Nicole Sibelet

Appendix F: Conference Communication

Tropentag 2014, Prague, Czech Republic
September 17-19, 2014
Conference on International Research on Food Security, Natural Resource Management and Rural Development
organised by the Czech University of Life Sciences Prague

Farmers' Organizations: Building Social Capital for the Conservation of Natural Resources in Uganda

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Introduction

Several studies have shown that social capital, defined as trust in others, social networks and norms of reciprocity, is essential to foment the collective action necessary to manage natural resources (Sonderskov, 2009). Social capital is normally divided into two categories: bridging social capital, which refers to horizontal networks of kin and close-knit groups and bonding social capital which refers to vertical networks across many groups. A balance between high bridging and high bonding social capital can cultivate progressive participation in determining community priorities and shared resources. When both types of social capital are low, communities are plagued by extreme individualism and opportunistic exploitation of common resources. An imbalance in bridging and bonding social capitals can cause community priorities to be determined by outside entities or resistance to change and maligning of outsiders (Flora, Flora, Spears, & Swanson, 2013). Organizations which are able to build social capital in the form of shared norms promote collective action and reduce the cost of monitoring and sanctioning those who exploit natural resources (Ostrom, 1990).

This research investigates if Savings and Internal Lending Communities (SILCs) can build social capital among their members which can then be used to collectively manage group natural resources.

Empirical research finds that social capital, as defined as trust in others, is very low in the parts of Africa historically affected by the trans-Atlantic slave trade (Nunn & Wantchekon, 2011) and violent conflict (Colletta, 2000). The Nnindye area where this study was conducted was affected by both the trans-Atlantic slave trade and, more recently by violent conflict during the civil war and the war with Tanzania.

Pappila (2013) found that active participation in community natural resource conservation schemes can build trust among the participants. However, facilitation by an NGO or other outside organization may be needed.

Four features are important to consider regarding building social capital within organizations: relations of trust; reciprocity and exchanges; common rules, norms and sanctions; and connectedness in networks and groups (Pretty, 2003). We looked for evidence that NGO-

supported SILC schemes are building these important features which could then facilitate the conservation of community natural resources.

Material and Methods

This research was undertaken as part of a field methods training course for two PhD programs: Agriculture Transformation by Innovation (AgTraIn) administered by the University of
Copenhagen and Agriculture and Rural Innovation (ARI) administered by Makerere University in Kampala, Uganda. The research group consisted of two AgTraIn students and two ARI students. Results are a compliation of six days of fieldwork which consisted of four focus groups,
(three with members of various farmers' groups and one with non-members), semi-structuredinterviews (Sibelet, Mutel *et al.*, 2013) with key informants, employees of NGOs which sponsor farmers' organizations in the area (UPFORD and World Vision International), members of farmers' organizations and non-members of organizations. Research also included a review of the record books of two SILC groups and organizational records of UPFORD.

Interviews were translated into English from Luganda by a local interpreter.

Results and Discussion

There is a high density of farmers' organizations in Nnindye parish with several organizations in each village. All organizations observed were either self-initiated and externally supported or externally initiated and externally supported. Organizations without external support quickly dissolve. Despite Putnam's proxy (Putnam, Leonardi, & Nanetti, 1994) which uses density of voluntary organizations as a proxy for social capital in an area, there are indications of low levels of trust in Nnindye which inhibits progressive participation in the community. We maintain that the density of voluntary organizations in the area is artificially high due to external governmental and NGO support.

This paper will consider only those groups which were externally supported by the NGO University Partnership for Outreach Research and Development (UPFORD). These groups consist of two components: a Savings and Internal Lending Community (SILC) and a group banana project. In the SILC component, members contribute to their personal savings accounts at every weekly meeting. The proceeds earned from the banana project as well as the interest paid on loans are used to provide microloans to the members. Personal loans are generally used for agricultural purposes, investment in a small business or for school fees.

The banana project consists of community banana plot managed by the group. Virus-free banana plantlets are provided by UPFORD. These plantlets are multiplied and managed on group land and the resulting suckers are distributed among the members. UPFORD provides training in good agricultural practices and members are expected to work together to maintain the plot.

The members of the groups are relatively demographically homogenous. Seventy percent of the members are women and most are over forty years old. UPFORD organizers report that men, particularly those under forty years old, are not interested in the SILC/banana projects and prefer more lucrative individual schemes.

Building Social Capital in SILC Groups

The SILC groups in Nnindye, Uganda are building the four elements of social capital considered important by Pretty (2003): relations of trust; reciprocity and exchanges; common

rules, norms and sanctions; and connectedness in networks and groups. The support and guidance provided by UPFORD helps to build this capital. UPFORD provides leadership, empowerment and transparency training to group members and group rules are designed to reduce the members' susceptibility to coercion. Groups with high levels of transparency enjoy relations of trust. Reciprocity and exchange are key tenants of Savings and Internal Lending Communities. As members pay back their loans, more money is available to other group members for loans. The groups enjoyed a 95% repayment rate on loans.

UPFORD encourages the groups to make and enforce rules related to personal savings and the repayment of loans. The members vote on the rules and apply sanctions as a group. However there are some instances of the group approving rules that they were not willing to enforce, for example the use of land as collateral for loans.

The SILC groups increased the networking and the interconnectedness of the participants. Groups meet weekly and members are penalized if they do not attend the meetings. Members listed

meeting people and "the spirit of teamwork" as two of the benefits that they enjoyed because of their participation. In addition to increasing in-group networking, the SILC groups have some interaction with the greater community. Ten percent of the groups' profit is distributed to members of the village identified as vulnerable persons. However, the members of the 27 groups supported by UPFORD have no contact with the other UPFORD groups; therefore there is little opportunity to build new contacts in different villages.

Group members develop connections with representatives of UPFORD and with community leaders, but build few connections in other communities. For this reason, we assume that most of the social capital built within these SILC groups is bonding social capital. We found some evidence of this during the interviews and fieldwork. Group rules inhibited the addition of new members. Some groups allowed new members only if they matched the level of personal savings that founding group members had built up over the three and a half years of the group's existence. Other groups refused new members, "They were not interested in the beginning. Now they see our progress and they want to join." These potential members were told that they must start their own groups. When asked if they would allow their daughters to join, one woman replied "she can have my place (in the group) when I die."

The fact that the schemes cater mainly to women limits their potential to build bridging social capital among the participants. These schemes target women because the organizers feel that empowerment among women is particularly low in this area. However, low empowerment among men may inhibit the groups' ability to build empowerment among women. We heard several reports of men removing their wives from the groups because they had become "too empowered." One woman explained to us that she had to sneak out of the house to attend the weekly meetings because her husband did not want her to participate in the group, stating, "If we get money we won't be submissive." We feel that the empowerment of both men and women is necessary for successful collective action.

Groups have also displayed bonding social capital in their decision making. Representatives of

UPFORD found a buyer for the bananas produced on one group's plot. The group did not honor the contract and decided instead to sell the bananas to group members at a deep discount, reducing the profit available for the group's activities.

Protection of Group Natural Resources

While the SILC groups have the dual goals of poverty alleviation through savings and microcredit as well as the promotion of conservation and good agricultural practices, the

group members prioritize the savings and microcredit portion. Members work in the banana plots weekly but do not always adhere to the cultural practices for which they received training. They are more likely to use the practices in their own banana plots.

Though 70% of the participants in the Nnindye SILC groups are women, male members and non- members are more likely to benefit from the distribution of seedstock. Of the twelve SILC groups in the Nnindye Parish for which data is available, men received 45% of the suckers distributed.

UPFORD reports state that many of the suckers perished because they were taken by members who did not properly care for them or did not have an adequate place to plant them. Despite UPFORD's goal of self-sustaining groups which are not dependent on external support, representatives stated that, after three and a half years, groups would likely dissolve without their support. Though human and social capital has been built within the groups, members still have not made plans for continuation of the group after UPFORD's support ceases (in 1.5 years). The

SILC portion of the group has been very active, but less attention has been paid to the group resource management.

However, there is some evidence that the banana scheme has benefited from the leadership and transparency training provided for the SILC groups. One member told us that he left a corrupt group (which was not supported by UPFORD) because group leaders exploited the group resources for their personal gain. He chose the UPFORD-supported group because he trusted the members and recognized the importance of transparency and group decision-making.

Conclusions and Outlook

The literature suggests and our observations confirm that both bridging and bonding social capital are low in the area studied. Due to the important role that social capital can play in collective action for the conservation of natural resources, the cultivation of social capital among the farmers in Uganda is an important goal.

SILC groups have the potential to build social capital among the participants by creating social networks, rules and norms and a culture of reciprocity. Self-initiated collective action has a potential to build social capital, but no "pure" forms of collective action were found in the area.

Social capital within the community is too low for collective action without the support of an external agent such as an NGO. Lacking the social capital needed for collective action, we conclude that the externally-supported SILC groups are building trust in the community, albeit slowly.

Because of the local appeal for savings and lending schemes, we feel that this model could be expanded to include other community resources such as sources of drinking water and forest resource protection.

References

Colletta, N. J. C. M. L. (2000). Violent conflict and the transformation of social capital lessons from Rwanda, Somalia, Cambodia, and Guatemala.

Flora, C. B., Flora, J. L., Spears, J. D., & Swanson, L. E. (2013). *Rural communities: legacy and change* (4th ed.): Westview Press.

Nunn, N., & Wantchekon, L. (2011). The Slave Trade and the Origins of Mistrust in Africa.*American Economic Review, 101*(7), 3221-3252. doi: doi: 10.1257/aer.101.7.3221

Ostrom, E. (1990). *Governing the commons: The evolution of institutions for collective action*: Cambridge university press.

Pappila, M. (2013). Forest certification and trust — Different roles in different environments. *Forest Policy and Economics, 31*(0), 37-43. doi:http://dx.doi.org/10.1016/j.forpol.2012.10.005

Pretty, J. (2003). Social Capital and the Collective Management of Resources. *Science, 302*(5652), 1912-1914.

Putnam, R. D., Leonardi, R., & Nanetti, R. Y. (1994). *Making democracy work: Civic traditions in modern Italy*: Princeton university press.

Sonderskov, K. M. (2009). The Environment. In G. T. Svendsen & G. L. H. Svendsen (Eds.), *Handbook of Social Capital: The Troika of Sociology, Political Science and Economics* (pp.252-271). Cheltenham, UK: Edward Elgar Publishing Limited.